

GW – 001

2015 AGWMR

PART 5 OF 5

April 2016

7. Data review procedures
8. Corrective action procedures
9. Review of data packages, which is performed regularly by the lab manager/QA Officer.

The QA/QCO will conduct these audits on an annual basis.

Management Reviews

HEAL management shall periodically, and at least annually, conduct a review of the laboratory's quality system and environmental testing activities to ensure their continuing suitability and effectiveness, and to introduce necessary changes or improvements. The review shall take account of:

1. the suitability and implementation of policies and procedures
2. reports from managerial and supervisory personnel
3. the outcome of recent internal audits
4. corrective and preventive actions
5. assessments by external bodies
6. the results of inter-laboratory comparisons or proficiency tests
7. changes in volume and type of work
8. client feed back
9. complaints
10. other relevant factors, such as laboratory health and safety, QC activities, resources, and staff training.

Findings from management reviews and the actions that arise from them shall be recorded and any corrective actions that arise shall be completed in an appropriate and agreed upon timescale.

Complaints

Complaints from clients are documented and given to the laboratory manager. The lab manager shall review the information and contact the client. If doubt is raised concerning the laboratory's policies or procedures, then an audit of the section or sections may be performed. All records of complaints and subsequent actions shall be maintained in the client compliant logbook for five years unless otherwise stated.

Internal and External Reports

The QA/QCO is responsible for preparation and submission of quality assurance reports to the appropriate management personnel as problems and issues arise. These reports

include the assessment of measurement systems, data precision and accuracy, and the results of performance and system audits. Additionally, they include significant QA problems, corrective actions, and recommended resolution measures. Reports of these Quality Assurance Audits describe the particular activities audited, procedures utilized in the examination and evaluation of laboratory records, and data validation procedures. Finally, there are procedures for evaluating the performance of Quality Control and Quality Assurance activities, and laboratory deficiencies and the implementation of corrective actions with the review requirements.

COPY

14.0 References (Analytical Protocols Utilized at HEAL)

1. Analytical Chemistry of PCB's. Erickson, Mitchell D., CRC Press, Inc. 1992.
2. Diagnosis & Improvement of Saline & Alkali Soils. Agriculture Handbook No. 60, USDA, 1954
3. Environmental Perspective on the Emerging Oil Shale Industry, EPA Oil & Shale Research Group.
4. Field and Laboratory Methods Applicable to Overburdens and Mine Soils, USEPA, EPA-600/2-78-054, March 1978
5. Handbook of Chemistry and Physics, 62nd Edition, CRC Press, Inc. 1981-1982.
6. Handbook on Reference Methods for Soil Testing, The Council on Soil Testing & Plant Analysis, 1980 and 1992
7. Laboratory Procedures for Analyses of Oilfield Waste. Department of Natural Resources, Office of Conservation, Injection and Mining Division, Louisiana, August 1988
8. Langelier index calculation. <http://www.corrosion-doctors.org/NaturalWaters/Langelier.htm>.
9. Manual for the Certification of Laboratories Analyzing Drinking Water, Criteria and procedures Quality Assurance Fifth Edition, U.S. Environmental Protection Agency, January 2005.
10. Manual of Operating Procedures for the Analysis of Selected Soil, Water, Plant Tissue and Wastes Chemical and physical Parameter. Soil, Water, and Plant Analysis Laboratory, Dept. of Soil and Water Science, The University of Arizona, August 1989
11. The Merck Index, Eleventh Edition, Merck & Co., Inc. 1989.
12. Methods for Chemical Analysis of Water and Wastes, USEPA, EPA-600/4-79-020, March 1979 and as amended December, 1982 (EPA-600/4-82-055)
13. Methods for the Determination of Metals in Environmental Samples, USEPA, EPA-600/4-91-010, June 1991
14. Methods of Soil Analysis: Parts 1 & 2, 2nd Edition, Agronomy Society of America, Monograph 9
15. Polycyclic Aromatic Hydrocarbons in Water Systems, CRC Press, Inc.

16. Procedures for Collecting Soil Samples and Methods of Analysis for Soil Survey. USDA Soil Conservation Service, SSIR No. 1
17. Quality Systems for Analytical Services, Revision 2.2, U.S. Department of Energy, October 2006.
18. Sampling Procedures and Chemical Methods in Use at the U.S. Salinity Laboratory for Characterizing Salt-Affected Soils and Water. USDA Salinity Laboratory.
19. Soil Survey Laboratory Methods Manual. Soil Survey Laboratory Staff. Soil Survey Investigations Report No. 42, version 2.0, August 1992.
20. Soil Testing Methods Used at Colorado State University for the Evaluation of Fertility, Salinity and Trace Element Toxicity, Technical Bulletin LT B88-2 January, 1988
21. Standard Methods for the Examination of Water and Wastewater:
 - a. AOWA, AWWA, and WPCG; 20th Edition, 1999
 - b. APHA, AWWA, and WEF; 21st Edition, 2005
 - c. APHA, AWWA, and WEF; 22nd Edition, 2011
 - d. APHA, AWWA, and WEF; Online
22. Technical Notes on Drinking Water Methods, U.S. Environmental Protection Agency, October 1994.
23. Test Methods for Evaluating Solid Waste: Physical/Chemical Methods, USEPA SW-846, 3rd Edition, Updates I, II, IIA, IIB, III, December, 1996.

Appendix D

13.0 BLOOMFIELD TERMINAL UNDERGROUND PROCESSING

Line Number	Description (Service)	Line Size	Line Length L/F	Starting Location	End Location	Drawing Reference
1	Effluent Wtr. Transfer Line	6	3250	Effluent Pond Outlet Pump P-616	Effluent Transfer P-671	D-500-8
2	Effluent Wtr. Trans. Pump	6	908	North Evaporation Pond Outlet	Effluent Transfer Pump P-671	D-500-8
3	Effluent Wtr. Pump Disch.	6	2797	Effluent Transfer P-671	Injection Well Building	D-500-8
4	Injection Well Recir. Line	6	2512	Injection Well Building	North Evaporation Pond	D-500-8
5	River Terrace Transfer Line	2	277	River Terrace Processing Skid	River Pump Building Water Basin	D-500-8
6	Crude Transfer Line	10	215	Pipe Rack East Of LPG Stg Tks.	Pipe Rack Southwest of Tk. # 31	D-700-800-
7	Steam Header at Terminals	6	215	Pipe Rack Southwest of Tk. # 31	Pipe Rack East Of LPG Stg. Tks.	N/A
8	Condensate Return Header	4	215	Pipe Rack East Of LPG Stg Tks.	Pipe Rack Southwest of Tk. # 31	N/A
9	Premium Receipts to Tk 32/36	4	218	Pipe Rack East Of LPG Bullets	Pipe Rack Southwest of Tk. # 31	D-600-800-
10	ULSD Sales Line	10	218	Pipe Rack Southwest of Tk. # 31	Filter Pad Area North Of Loading Pad	D-700-800-
11	Unleaded Gasoline Sales	10	218	Pipe Rack Southwest of Tk. # 31	Filter Pad Area North Of Loading Pad	D-700-800-
12	Transmix Sales from Tk #30	10	218	Pipe Rack Southwest of Tk. # 31	Filter Pad Area North Of Loading Pad	D-700-800-
13	Subgrade receipts to tanks 13, 14	4	218	Pipe Rack Southwest of Tk. # 31	Area Northeast of B-21	D-600-800-
14	VRU Effluent	3	275	Pipe Rack Southwest of Tk. # 31	East of B-21	D-600-800-
26	VRU Effluent	4	410	East of B-21	Manifold @ VRU Unit	D-700-800-
15	VRU Return (Former Poly Feed Lines)	2		Area Northeast of B-21	Pipe Rack Southwest of Tk. # 31	N/A
16	LPG Rerun Line	2		Area Northeast of B-21	Pipe Rack Southwest of Tk. # 31	N/A
17	Saturate To Storage	2		Pipe Rack Southwest of Tk. # 31	Area Northeast of B-21	N/A
18	C-4 To Storage	2		Pipe Rack Southwest of Tk. # 31	Area Northeast of B-21	N/A
19	C-3 To Storage	2		Pipe Rack Southwest of Tk. # 31	Area Northeast of B-21	N/A
20	Sour Naphtha sales From Tk. 23	8	534	Pipe Rack Southwest of Tk. # 31	Filter Pad Area North Of Loading Pad	D-700-800-
21	Dyed Diesel Sales From Tk.18	6	534	Pipe Rack Southwest of Tk. # 31	Filter Pad Area North Of Loading Pad	D-700-800-
22	Slop Line From Loading Rack	4	180	Gasoline Rack Sump	West of Terminal Office	N/A
23	ULSD/Naptha receipts	6	750	South West Of Tk.# 25	West of truck unload rack	D-600-800-
24	blinded	8	392	Pipe Rack West Of Tk.# 36	Filter Pad Area North Of Loading Pad	D-700-800-
25	Premium Sales from Tk. 32	6	392	Pipe Rack West Of Tk.# 36	Filter Pad Area North Of Loading Pad	D-700-800-
27	Naphta Feed To VRU Unit	4		Transfer Pump @ Tk. # 44	Manifold @ VRU Unit	NewTech M-6
28	blinded	4		Manifold @ VRU Unit	Naptha Fill Line To Tk. # 44	NewTech M-6
29	Off-Road Diesel To Bays #1 & 2	8	150	From F-706 Filter Piping	To Meter Spools @ Bays # 1&2	D-700-800-
				From F-706 Filter	To Meter Spools @	

13.0 BLOOMFIELD TERMINAL UNDERGROUND PROCESS

Line Number	Description (Service)	Line Size	Line Length L/F	Starting Location	End Location	Drawing Reference
31	Premium Sales Line	10	150	From F-705 Filter Piping	To Meter Spools @ Bays # 1.2 & 3	D-700-800-
32	Unleaded Gasoline Sales Line	10	150	From F-704 Filter Piping	To Meter Spools @ Bays # 1.2 & 3	D-700-800-
33	ULSD To Bay # 4	8	150	From F-703 Filter Piping	To Meter Spool @ Bay # 4	D-700-800-
34	Ethanol Pump Suction Line	8	160	From Tk. # 45 Outlet Nozzel	To P-707 & P-707A Pump Suction	D-700-8
35	Ethanol Unloading Line	4	160	From P-706 Pump Discharge	To Tk. # 45 Inlet Nozzel	D-700-8
36	Naphtha Unloading Line	6		Suction Manifold @ P-607A	Unloading line @ Tk. #18 and 19	B-600-5
37	Naptha Rundown To Tk.# 35	3		Line From North Pipe Rack Area	To Tk. # 35 Fill Nozzle	B-600-5
38	Naptha Feed Line to Unit	4		From P-607A Pump Discharge	To North Pipe Rack Feed To Units	B-600-5
39	Cooling Water Supply Line	12		From # 1 Cooling Tower Pumps	To Rack Area @ Reformer Unit	D-500-5
40	Cooling Water Return Line	12		From Rack Area @ Reformer	To #1 Cooling Tower Water Inlet	D-500-5
41	Cooling Water Supply Line	20		From # 2 Cooling Tower Pumps	To S. End of FCC Unit @ Twr. 207 Area	D-201-5
42	Cooling Water Return Line	20		From South End of FCC Unit	To # 2 Cooling Tower Water Inlet	D-201-5
43	Sewer Transfer Line	10	54	From Main Sewer Box # 12	To Main Sewer Box # 11	D-500-5
44	Sewer Transfer Line	10	46	From Main Sewer Box # 11	To Observation Access Can # 10	D-500-5
45	Sewer Transfer Line	12	33	From Observation Access Can #10	To Observation Access Can # 6	D-500-5
46	Sewer Transfer Line	12	73	From Observation Access Can # 6	To Main Sewer Box # 5	D-500-5
47	Sewer Transfer Line	14	69	From Main Sewer Box # 5	To Observation Access Can # 4	D-500-5
48	Sewer Transfer Line	14	86	From Observation Access Can #4	To Main Sewer Box # 3	D-500-5
49	Sewer Transfer Line	12	62	From Main Sewer Box # 9	To main Sewer Box # 8	D-500-5
50	Sewer Transfer Line	12	66	From Main Sewer Box # 8	To Main Sewer Box # 7	D-500-5
51	Sewer Transfer Line	14	86	From Main Sewer Box # 7	To Main Sewer Box # 3	D-500-5
52	Sewer Transfer Line	14	145	From Main Sewer Box # 3	To Observation Access Can #2	D-500-5
53	Sewer Transfer Line	14	100	From Observation Access Can #2	To Main Sewer Box # 1	D-500-5
54	Sewer Transfer Line	12/10	56	From Main Sewer Box # 1	To Inlet @ API Sperator	D-500-5
55	Sewer Collection Manifold	8>4	56	Area East Side of # 4 Boiler	To North Side of Sewer Box # 12	D-500-5
56	Sewer Collection Manifold	10>4	164	Area @ & Around Crude Twr.	To North Side Of Sewer Box # 11	D-500-5
57	Sewer Collection Manifold	8>4	100	Area @ & Around E-106A & B	To Northwest Of Sewer Box # 10	D-500-5
58	Sewer Collection Manifold	6	10	Area @ V-101A Desalter	To East Side Of Sewer Box # 10	D-500-5

*All lines that are temporarily out of service due to suspension of refining operations were steamed out and are b

13.0 BLOOMFIELD TERMINAL UNDERGROUND PROCESS

Line Number	Description (Service)	Line Size	Line Length L/F	Starting Location	End Location	Drawing Ref
59	Sewer Collection Manifold	10>4	452	Area Thru Reformer Pump Row	To Observation Access Can # 6	D-500-5
60	Sewer Collection Manifold	10>4	316	Area Along East Side of Reformer	To Observation Access Can # 6	D-500-5
61	Sewer Collection Manifold	8>4	60	Area @ & Around V101 Desalter	To Observation Access Can #4	D-500-5
62	Sewer Collection Manifold	8>4	140	Area @ & Around T-101 Tower	To West Side Of Sewer Box # 9	D-500-5
63	Sewer Collection Manifold	8>4	104	Area @ & Around P101 Charge P.	To North Side Of Sewer Box # 9	D-500-5
64	Sewer Collection Manifold	8>4	88	Area @ & Around T-103 Tower	To Northwest Side Of Sewer Box # 8	D-500-5
65	Sewer Collection Manifold	8>4	92	Area @ & Around Heavy Oil Exch.	To North Side Of Sewer Box # 8	D-500-5
66	Sewer Collection Manifold	8>4	41	Area @ & Around Main Air Blower	To Northwest Side Of Sewer Box # 3	D-500-5
67	Sewer Collection Manifold	6>3	324	Area @ Burner Fuel Loading and Manifold	To Observation Access Can (Precipitator)	D-600-5
68	Sewer Collection Manifold	4	141	Area Drains @ Air Building	To Sewer Transfer Line(Box # 1 to API)	D-500-5
69	Sewer Collection Manifold	4	86	P-224 Pump & Cat Surface Drain	To Sewer Transfer Line From FCC Process	D-201-5
70	Sewer Collect./Transfer Line	6	896	Gas Con Unit Collection M.H.	To FCC Sewer Box Manhole # 13	D-201-5
71	Sewer Transfer Line	10	35	From FCC Sewer Box M.H. # 13	To FCC Sewer Box # 14 (Roadway)	D-201-5
72	Sewer Transfer Line	10	235	From FCC Sewer Box M.H. #14	To 20" Inlet @ API	D-500-5
73	Sewer Collection Manifold	6/4	335	Area @ & Around Gas Con. Unit	To Gas Con. Unit Sewer Collection	D-200-2
74	Sewer Transfer Line	10	159	From Treater Main Sewer Box # 16	To Sewer Box #15 - S.E. Of C-204	D-500-5
75	Sewer Transfer Line	10	162	Sewer Box #15 - S.E. Of C-204	To 20" Inlet @ API	D-500-5
76	Sewer Collection Manifold	10>4	411	Area In & Around Treater Unit	To Treater Sewer Box At South Side Of Unit	D-500-5
77	Sewer Collection Manifold	6>2		Area In & Around Poly Unit	To Inlet Bay @ API	D-500-5
78	Sewer Transfer Line	10	130	From Sewer Box # 17 @ DHT Unit	To Sewer Box # 18 @ S.E. Corner of Poly	D-500-5
79	Sewer Transfer Line	12	35	From Sewer Box # 18	To Inlet Manifold @ API Basin Area	
80	Sewer Collection Manifold	10>4	635	Area In & Around DHT/Larox Unit	To Sewer Box # 18 @ S.E. Corner of DHT	
81	Crude Transfer Line	12	99	Pipe Rack East Of LPG Stg Tks.	Pipe Rack South of Crude Unloading Bays	D-000-9
82	Crude Transfer Line	12	194	Pipe Rack South of Crude Unloading Bays	Berm South of Tank #43	D-000-9
83	Sewer Transfer Line	4	822	Discharge at Tk #37	Valve box at corner Northeast of DHT	AMEC
84	Sales Line from Tk #3 & 4	8	300	Area West of API Separator	DHT Option City	
85	Diesel Reciepts (truck)	6	25	Roadway SW of Tk #17	Piperack btwn Tk #34 and Tk #25	D-800-600
86	Premium/Uneaded Reciepts	6	25	Roadway SW of Tk #17	Piperack btwn Tk #24 and Tk #25	D-600-800-800-
87	Groundwater Recovery Transfer Line	3	970	Tk #38	Slop Line NE of Tk #31	D-600-8
88	Injection Well Transfer	4	45	Injection Well Building	Downhole Injection	D-500-5

13.0 BLOOMFIELD TERMINAL UNDERGROUND PROCESS

Line Number	Description (Service)	Line Size	Line Length L/F	Starting Location	End Location	Drawing Reference
89	VRU Return to Tanks 13 and 14	3	32	Pipe Bridge South of Tanks 13 and 14	Exits inside South Wall of Containment Berm	B-600-5
90	Tie-in Tank 11 Crude to LACT	6	116	Pipe Bridge North of LACT Unit	10 ft East of Tie-in to LACT Unit	B-600-5
91	Crude to Tank 11	6	34	Under Pipe Rack South of Tank 11	Exits Berm South of Tank 11	B-600-5

Total Linear Feet of Lines (2014) 23509

Total Linear Feet intended for 2015 7396

No lines were tested in 2015 per Operations

Appendix E

Waste 2015							
	Description	Containers		Quantity	Destination	Treatment	Cert. of Disposal/Consumpti
		No.	Type				
	RQ, NA3077, Hazardous Waste, Solid, N.O.S., (Petroleum sludge), PG III (K051)	6	DM	4500 P	Clean Harbors Deer Park, LLC. 2027 Independence Parkway South La Porte, TX 77571	H040-Incineration	X
	NA3077, Hazardous Waste, Solid, N.O.S., (Benzene), 9, PG III	16	DM	12000P			
	UN3175 Waste Solids Containing Flammable Liquids, N.O. S. (Benzene) 4.1 PG II RQ (D001=100 lbs)	3	DM	2250 P	Clean Harbors Aragonite LLC 11600 N Aftus Road Aragonite, UT 84029	H040-Incineration	X
		6	DM	4500 P			
	UN1993, Waste Flammable Liquids, N.O.S. (Crude Benzene), 3, PG III, (RQ D001=100LBS)	2	DM	104 G	Clean Harbors Aragonite LLC 11600 N Aftus Road Aragonite, UT 84029	H040-Incineration	X
	UN1993, Waste Flammable Liquids, N.O.S. (Benzene), 3, PG III, (RQ D001)	3	DM	1020 P	Clean Harbors Deer Park, LLC. 2027 Independence Parkway South La Porte, TX 77571	H040-Incineration	X

ard Box
rum
oard yard box

Appendix **F**

1.0 DATA VALIDATION INTRODUCTION

This summary presents data verification results for groundwater and surface water sampling activities conducted in 2015 at the Bloomfield Terminal pursuant to Section IV.A.2. of the July 2007 Consent Order (NMED, 2007) issued by the New Mexico Environment Department Hazardous Waste Bureau (NMED-HWB), and Section 22 of Discharge Permit GW-001 (NMOCD, 2010) issued by the New Mexico Energy, Mineral, and Natural Resources Department Oil Conservation Division (EMNRD-OCD). The data review was performed in accordance with the procedures specified in the Order issued by NMED (NMED, 2007), USEPA Functional Guidelines for Organic and Inorganic Data Review, and quality assurance and control parameters set by the project laboratory Hall Environmental Analysis Laboratory, Inc. The samples evaluated include groundwater samples collected from monitoring wells installed at the Refinery Complex and North Boundary Barrier, a groundwater seep sample collected at the San Juan River bluff, and surface water samples collected from the San Juan River Terrace.

A total of 55 groundwater samples, 1 groundwater seep sample, and 12 surface water samples (excluding QA samples) were collected in annual and semiannual monitoring events between April 20, 2015 and August 18, 2015. Groundwater samples, groundwater seep samples, and surface water samples were submitted to Hall Environmental Analysis Laboratory for the following parameters:

- volatile organic compounds (VOCs) by USEPA Method 8260B;
- Gasoline, diesel, and motor oil range organics by SW-846 Method 8015B;
- Total metals (arsenic, barium, cadmium, chromium, lead, selenium, and silver) and dissolved metals (arsenic, barium, cadmium, chromium, copper, iron, lead, magnesium, manganese, potassium, selenium, silver, sodium, uranium, and zinc) by SW846 Method 6010B/E200.7; and
- Mercury by EPA Method 7470.

Groundwater and surface water samples were also analyzed for general water quality parameters including, fluoride, chloride, nitrate, nitrite, bromide, phosphorous, sulfate, total carbon dioxide, total alkalinity, bicarbonate, total dissolved solids, and specific conductance.

Additionally, 14 quality assurance samples consisting of trip blanks, equipment rinsate blanks, and field duplicates were collected and analyzed as part of the investigation activities. Table A-1 presents a summary of the field sample identifications, laboratory sample identifications, and sample collection dates.

2.0 QUALITY CONTROL PARAMETERS REVIEWED

Sample results were subject to a Level II data review that includes an evaluation of the following quality control (QC) parameters:

- Chain-of-Custody;
- Sample Preservation and Temperature Upon Laboratory Receipt
- Holding Times;
- Blank Contamination (method blanks, trip blanks, field blanks, and equipment rinsate blanks);
- Surrogate Recovery (for organic parameters);
- Laboratory Control Sample (LCS) Recovery and Relative Percent Difference (RPD);
- Matrix Spike/Matrix Spike Duplicate (MS/MSD) Recovery and RPD;
- Duplicates (field duplicate, laboratory duplicate); and
- Other Applicable QC Parameters.

The data qualifiers used to qualify the analytical results associated with QC parameters outside of the established data quality objectives are defined below:

J+	The analyte was positively identified; however, the result should be considered an estimated value with a potential high bias.
J-	The analyte was positively identified; however, the result should be considered an estimated value with a potential low bias.
UJ	The reporting limit for a constituent that was not detected is considered an estimated value.
R	Quality control indicates that the data is not usable.

Results qualified as “J+”, “J-”, or “UJ” are of acceptable data quality and may be used quantitatively to fulfill the objectives of the analytical program, per EPA guidelines.

Results for the performance monitoring events that required qualification based on the data verification are summarized in Table A-2.

2.1 CHAIN-OF-CUSTODY

The chain-of-custody documentation associated with project samples was found to be complete. Chain-of-custodies included sample identifications, date and time of collection, requested parameters, and relinquished/received signatures.

2.2 SAMPLE PRESERVATION AND TEMPERATURE UPON LABORATORY RECEIPT

Samples collected were received preserved and intact by Hall Environmental Laboratories, Inc. Samples were received by the laboratory at a temperature of 6.0 degrees Celsius or lower. Data qualification on lower temperature samples was not required.

2.3 HOLDING TIMES

All samples were extracted and analyzed within method-specified holding time limits with the exception of total carbon dioxide a general water quality parameter. The recommended holding time for total carbon dioxide analysis is “immediate”. Unless the sample is analyzed in the field it is flagged by the laboratory. Since analysis was conducted in a reasonable time period after collection of samples and samples were properly preserved, the data was accepted. Data qualification for exceeding holding times is shown on Table A-2.

2.4 BLANK CONTAMINATION

2.4.1 Method Blank

Method blanks were analyzed at the appropriate frequency. Target compounds were not detected in the method blanks.

2.4.2 Trip Blank

Trip blanks were analyzed at the appropriate frequency as specified in the Order and Permit. Target compounds were not detected in the trip blanks.

2.4.3 Field Blanks/Equipment Rinsate Blank

Field and equipment rinsate blanks were collected as specified in the Order and Permit.

2.4.4 Common Laboratory Contaminants

Per USEPA guidelines, common laboratory contaminants for VOC analysis are acetone, 2-butanone (MEK), cyclohexane, chloromethane, and methylene chloride. Data qualification was not required since COCs were not detected in the method blanks.

2.4.5 Methanol Blanks

Methanol Blanks are not applicable and were not analyzed.

2.5 SURROGATE RECOVERY

Surrogate recoveries for the organic and inorganic analyses were performed at the required frequency and were within laboratory acceptance limits, with the following exception:

Lab Report 1504933

Surrogate recovery for bromofluorobenzene (BFB) was above the upper acceptance limit for field sample OW-16+60 and Laboratory Batch ID R25707. The associated detected field sample results for gasoline range organics (GRO) are qualified J+ due to a potential high bias.

Data qualification for surrogate recovery is shown on Table A-2.

2.6 LCS RECOVERY AND RELATIVE PERCENT DIFFERENCE

LCS/LCS duplicates were performed at the required frequency and were evaluated based on the following criteria:

- If the analyte recovery was above acceptance limits for the LCS or LCS duplicate, but the analyte was not detected in the associated batch, then data qualification was not required.
- If the analyte recovery was above acceptance limits for the LCS or LCS duplicate and the analyte was detected in the associated batch, then the analyte results were qualified “J+” to account for a potential high bias.
- If the analyte recovery was below acceptance limits for LCS or LCS duplicate then the analyte results in the associated analytical batch were qualified (“UJ” for non-detects and “J-” for detected results) to account for a potential low bias.

LCS/LCSD percent recoveries and relative percent differences (RPDs) were within acceptance limits and no qualification was required.

2.7 MS/MSD RECOVERY AND RELATIVE PERCENT DIFFERENCE

MS/MSD samples were performed at the required frequency and were evaluated by the following criteria:

- If the MS or MSD recovery for an analyte was above acceptance limits but the analyte was not detected in the associated analytical batch, then data qualification was not required.
- If the MS or MSD recovery for an analyte was above acceptance limits and the analyte was detected in the associated analytical batch, then analyte results were qualified “J+” to account for a potential high bias.
- Low MS/MSD recoveries for inorganic parameters result in sample qualification of the associated analytical batch with a “J-”.

- Results were not qualified based on non-project specific MS/MSD (i.e., batch QC) recoveries.

Some lab reports do not report MS/MSD results if none of the samples included under that report were used for the MS/MSD; however, in many instances the sample used for the MS/MSD was a sample of similar matrix materials submitted by Western in a different data set and its MS/MSD results were included in other lab reports, which are included in this data validation review. MS/MSD percent recoveries and RPDs were within acceptance limits and no qualification was required.

2.8 DUPLICATES

2.8.1 Field Duplicates

Field duplicates were collected at a rate as stated in the Order and Permit. The RPDs between the field duplicate and its associated sample were calculated and are presented in Table A-3. The field duplicates were evaluated by the following criteria:

- If an analyte was detected at a concentration greater than five times the method reporting limit, the RPD should be less than 25 percent for ground water samples.
- If an analyte was detected at a concentration that is less than five times the method reporting limit, then the difference between the sample and the field duplicate should not exceed the method reporting limit.
- Duplicate RPDs are calculated by dividing the difference of the concentrations by the average of the concentrations.

Field duplicate RPDs were within acceptance limits except for the following:

- Total recoverable barium, chromium and lead for field sample MW-44; and
- Total bromide for field sample MW-44.

Data qualification for field duplicate samples is shown on Table A-3.

3.0 COMPLETENESS SUMMARY

The following equation was used to calculate the technical completeness:

$$\% \text{ Technical Completeness} = \left(\frac{\text{Number of usable results}}{\text{Number of reported results}} \right) \times 100$$

The technical completeness attained for Annual and Semiannual monitoring activities conducted in 2015 was 100 percent. The completeness results are provided in Table A-4. The analytical results for the required analytes per the Order and Permit were considered usable for the intended purposes and the project DQOs have been met.

Table A-1
Sample Identification - 2015 Annual Monitoring Report
Western Refining Southwest, Inc. - Bloomfield Terminal

Project Name	Sample ID	Lab ID	Date Collected	Sample Type
RCRA Wells 8-18-15	MW-51	1508875-001	8/18/2015	GW
RCRA Wells 8-18-15	MW-70	1508875-002	8/18/2015	GW
RCRA Wells 8-18-15	MW-53	1508875-003	8/18/2015	GW
RCRA Wells 8-18-15	MW-52	1508875-004	8/18/2015	GW
RCRA Wells 8-18-15	MW-62	1508875-005	8/18/2015	GW
RCRA Wells 8-18-15	MW-63	1508875-006	8/18/2015	GW
RCRA Wells 8-18-15	MW-64	1508875-007	8/18/2015	GW
RCRA Wells 8-18-15	MW-65	1508875-009	8/18/2015	GW
RCRA Wells 8-18-15	MW-59	1508875-010	8/18/2015	GW
RCRA Wells 8-18-15	MW-67	1508875-012	8/18/2015	GW
RCRA Wells 8-18-15	MW-68	1508875-013	8/18/2015	GW
RCRA Wells 8-18-15	TRIP BLANK	1508875-014	8/18/2015	TB
Cross Gradient Wells 8-19-15	MW-1	1508976-001	8/19/2015	GW
Cross Gradient Wells 8-19-15	MW-13	1508976-002	8/19/2015	GW
Cross Gradient Wells 8-19-15	MW-27	1508976-003	8/19/2015	GW
Cross Gradient Wells 8-19-15	MW-32	1508976-004	8/19/2015	GW
Down Gradient Wells 8-20-15	MW-11	1508a58-001	8/20/2015	GW
Down Gradient Wells 8-20-15	MW-12	1508a58-002	8/20/2015	GW
Down Gradient Wells 8-20-15	MW-34	1508a58-003	8/20/2015	GW
Down Gradient Wells 8-20-15	MW-35	1508a58-004	8/20/2015	GW
Down Gradient Wells 8-20-15	MW-37	1508A58-004	8/20/2015	GW
Down Gradient Wells 8-20-15	MW-38	1508a58-006	8/20/2015	GW
Down Gradient Wells 8-20-15	MW-11 Dup	1508a58-007	8/20/2015	FD
Refinery Wells 8-25-15	MW-29	1508c52-001	8/25/2015	GW
Refinery Wells 8-25-15	MW-30	1508c52-002	8/25/2015	GW
Refinery Wells 8-25-15	MW-44	1508c52-003	8/25/2015	GW
Refinery Wells 8-25-15	MW-4	1508c52-005	8/25/2015	GW
Refinery Wells 8-25-15	RW-15	1508c52-006	8/25/2015	GW
Refinery Wells 8-25-15	MW-31	1508c52-007	8/25/2015	GW
Refinery Wells 8-25-15	Trip Blank	1508C52-008	8/25/2015	TB
San Juan River Bluff 8-26-15	Outfall #2	1508d27-001	8/26/2015	SW
San Juan River Bluff 8-26-15	Outfall #3	1508D27-001	8/26/2015	SW
San Juan River Bluff 8-26-15	Equipment Blank	1508D27-002	8/26/2015	EB
San Juan River Bluff 8-26-15	Upstream	1508d32-001	8/26/2015	SW
San Juan River Bluff 8-26-15	Down Stream	1508d32-002	8/26/2015	SW
North Boundary Barrier 8-26-15	OW 0+60	1508d33-001	8/26/2015	GW
North Boundary Barrier 8-26-15	OW 11+15	1508d33-002	8/26/2015	GW
North Boundary Barrier 8-26-15	OW 3+85	1508d33-003	8/26/2015	GW
Collection Wells 8-26-15	CW 0+60	1508d34-001	8/26/2015	GW
Collection Wells 8-26-15	CW 25+95	1508d34-002	8/26/2015	GW
Collection Wells 8-26-15	CW 25+95D	1508d34-003	8/26/2015	GW
Collection Wells 8-26-15	Trip Blank	1508d34-004	8/26/2015	TB
North Boundary Barrier 8-26-15	OW 16+60	1508d35-001	8/26/2015	GW
North Boundary Barrier 8-26-15	OW 22+00	1508d35-002	8/26/2015	GW
North Boundary Barrier 8-26-15	OW 23+10	1508d35-003	8/26/2015	GW
North Boundary Barrier 8-26-15	OW 23+90	1508d35-004	8/26/2015	GW
North Boundary Barrier 8-26-15	OW 25+70	1508d35-005	8/26/2015	GW
San Juan River 9-1-15	North of 45	1509079-001	9/1/2015	SW

Table A-1
Sample Identification - 2015 Annual Monitoring Report
Western Refining Southwest, Inc. - Bloomfield Terminal

Project Name	Sample ID	Lab ID	Date Collected	Sample Type
San Juan River 9-1-15	North of 46	1509079-002	9/1/2015	SW
San Juan River 9-1-15	Trip Blank	1509079-003	9/1/2015	TB
Downgradient Wells 4-20-15	MW-12	1504854-001	4/20/2015	GW
Downgradient Wells 4-20-15	MW-35	1504854-002	4/20/2015	GW
Downgradient Wells 4-20-15	MW-37	1504854-003	4/20/2015	GW
Downgradient Wells 4-20-15	MW-38	1504854-004	4/20/2015	GW
Downgradient Wells 4-20-15	Rinsate	1504854-005	4/20/2015	TB
Cross-Gradient Wells 4-20-15	MW-1	1504855-001	4/20/2015	GW
Cross-Gradient Wells 4-20-15	MW-13	1504855-002	4/20/2015	GW
Cross-Gradient Wells 4-20-15	MW-33	1504855-003	4/20/2015	GW
Refinery Wells 4-20-15	MW-52	1504863-001	4/20/2015	GW
Refinery Wells 4-20-15	MW-52DUP	1504863-002	4/20/2015	FD
Refinery Wells 4-20-15	Trip Blank	1504863-003	4/20/2015	TB
Collection Wells 4-21-15	CW-0+60	1504930-001	4/21/2015	GW
Collection Wells 4-21-15	CW-25+95	1504930-002	4/21/2015	GW
Collection Wells 4-21-15	CW-25+95 Dup	1504930-003	4/21/2015	FD
Collection Wells 4-21-15	Trip Blank	1504930-004	4/21/2015	TB
North Boundary Barrier 4-21-15	OW-16+60	1504933-001	4/21/2015	GW
North Boundary Barrier 4-21-15	OW-11+15	1504933-002	4/21/2015	GW
North Boundary Barrier 4-21-15	OW-0+60	1504933-003	4/21/2015	GW
North Boundary Barrier 4-21-15	OW-25+70	1504934-001	4/21/2015	GW
North Boundary Barrier 4-21-15	OW-23+90	1504934-002	4/21/2015	GW
North Boundary Barrier 4-21-15	OW-23+10	1504934-003	4/21/2015	GW
North Boundary Barrier 4-21-15	OW-22+00	1504934-004	4/21/2015	GW
North Boundary Barrier 4-21-15	Rinsate	1504934-005	4/21/2015	EB
San Juan River 4-22-15	Up Stream	1504a00-001	4/22/2015	SW
San Juan River 4-22-15	Down Stream	1504a00-002	4/22/2015	SW
San Juan River 4-22-15	North Of 45	1504a00-003	4/22/2015	SW
San Juan River 4-22-15	North Of 46	1504a00-004	4/22/2015	SW
San Juan River Bluff 4-22-15	Outfall 2	1504a01-001	4/22/2015	SW
San Juan River Bluff 4-22-15	Outfall 3	1504a01-002	4/22/2015	SW
San Juan River Bluff Seeps 4-22-15	Seep #1	1504a02-001	4/22/2015	GW
San Juan River Bluff Seeps 4-22-15	Seep #1 Dup	1504a02-002	4/22/2015	FD
San Juan River Bluff Seeps 4-22-15	TRIP BLANK	1504a02-003	4/22/2015	TB

Notes:

GW = Groundwater TB = Trip Blank
FD = Field duplicate EB = Equipment Blank
SW = Surface Water

Table A-2
Qualified Data - 2015 Annual Monitoring Report
Western Refining Southwest, Inc. - Bloomfield Terminal

Sample ID	Date Collected	Analyte	Result	Units	Matrix	Qualifier	Comments
MW-1	8/19/2015	Total Carbon Dioxide	230	mg CO2/L	GW	J-	Qualified low bias - analysis outside holding time.
MW-11	8/20/2015	Total Carbon Dioxide	1000	mg CO2/L	GW	J-	Qualified low bias - analysis outside holding time.
MW-11 Dup	8/20/2015	Total Carbon Dioxide	990	mg CO2/L	FD	J-	Qualified low bias - analysis outside holding time.
MW-12	8/20/2015	Total Carbon Dioxide	130	mg CO2/L	GW	J-	Qualified low bias - analysis outside holding time.
MW-13	8/19/2015	Total Carbon Dioxide	890	mg CO2/L	GW	J-	Qualified low bias - analysis outside holding time.
MW-27	8/19/2015	Total Carbon Dioxide	490	mg CO2/L	GW	J-	Qualified low bias - analysis outside holding time.
MW-29	8/25/2015	Total Carbon Dioxide	230	mg CO2/L	GW	J-	Qualified low bias - analysis outside holding time.
MW-30	8/25/2015	Total Carbon Dioxide	1400	mg CO2/L	GW	J-	Qualified low bias - analysis outside holding time.
MW-31	8/25/2015	Total Carbon Dioxide	1100	mg CO2/L	GW	J-	Qualified low bias - analysis outside holding time.
MW-32	8/19/2015	Total Carbon Dioxide	180	mg CO2/L	GW	J-	Qualified low bias - analysis outside holding time.
MW-34	8/20/2015	Total Carbon Dioxide	820	mg CO2/L	GW	J-	Qualified low bias - analysis outside holding time.
MW-35	8/20/2015	Total Carbon Dioxide	790	mg CO2/L	GW	J-	Qualified low bias - analysis outside holding time.
MW-37	8/20/2015	Total Carbon Dioxide	770	mg CO2/L	GW	J-	Qualified low bias - analysis outside holding time.
MW-38	8/20/2015	Total Carbon Dioxide	310	mg CO2/L	GW	J-	Qualified low bias - analysis outside holding time.
MW-4	8/25/2015	Total Carbon Dioxide	1100	mg CO2/L	GW	J-	Qualified low bias - analysis outside holding time.
MW-44	8/25/2015	Total Carbon Dioxide	340	mg CO2/L	GW	J-	Qualified low bias - analysis outside holding time.
MW-44 D	8/25/2015	Total Carbon Dioxide	340	mg CO2/L	FD	J-	Qualified low bias - analysis outside holding time.
MW-51	8/18/2015	Total Carbon Dioxide	240	mg CO2/L	GW	J-	Qualified low bias - analysis outside holding time.
MW-52	8/18/2015	Total Carbon Dioxide	200	mg CO2/L	GW	J-	Qualified low bias - analysis outside holding time.
MW-53	8/18/2015	Total Carbon Dioxide	300	mg CO2/L	GW	J-	Qualified low bias - analysis outside holding time.
MW-59	8/18/2015	Total Carbon Dioxide	940	mg CO2/L	GW	J-	Qualified low bias - analysis outside holding time.
MW-62	8/18/2015	Total Carbon Dioxide	520	mg CO2/L	GW	J-	Qualified low bias - analysis outside holding time.
MW-63	8/18/2015	Total Carbon Dioxide	480	mg CO2/L	GW	J-	Qualified low bias - analysis outside holding time.
MW-64	8/18/2015	Total Carbon Dioxide	260	mg CO2/L	GW	J-	Qualified low bias - analysis outside holding time.
MW-64D	8/18/2015	Total Carbon Dioxide	260	mg CO2/L	GW	J-	Qualified low bias - analysis outside holding time.
MW-65	8/18/2015	Total Carbon Dioxide	1300	mg CO2/L	GW	J-	Qualified low bias - analysis outside holding time.
MW-67	8/18/2015	Total Carbon Dioxide	310	mg CO2/L	GW	J-	Qualified low bias - analysis outside holding time.
MW-68	8/18/2015	Total Carbon Dioxide	180	mg CO2/L	GW	J-	Qualified low bias - analysis outside holding time.

Table A-2
Qualified Data - 2015 Annual Monitoring Report
Western Refining Southwest, Inc. - Bloomfield Terminal

Sample ID	Date Collected	Analyte	Result	Units	Matrix	Qualifier	Comments
MW-70	8/18/2015	Total Carbon Dioxide	780	mg CO2/L	GW	J-	Qualified low bias - analysis outside holding time.
Outfall #2	8/26/2015	Total Carbon Dioxide	78	mg CO2/L	SW	J-	Qualified low bias - analysis outside holding time.
Outfall #3	8/26/2015	Total Carbon Dioxide	85	mg CO2/L	SW	J-	Qualified low bias - analysis outside holding time.
RW-15	8/25/2015	Total Carbon Dioxide	1200	mg CO2/L	GW	J-	Qualified low bias - analysis outside holding time.
Seep #1	4/22/2015	Total Carbon Dioxide	390	mg CO2/L	GW	J-	Qualified low bias - analysis outside holding time.
Seep #1 Dup	4/22/2015	Total Carbon Dioxide	390	mg CO2/L	GW	J-	Qualified low bias - analysis outside holding time.
OW-O+60	4/24/2015	Gasoline Range Organics (GRO)	0.3	mg/L	GW	J+	Qualified high bias - surrogate recovery high
OW-11+15	4/24/2015	Gasoline Range Organics (GRO)	5.8	mg/L	GW	J+	Qualified high bias - surrogate recovery high
OW-16+60	4/23/2015	Gasoline Range Organics (GRO)	1.8	mg/L	GW	J+	Qualified high bias - surrogate recovery high

Notes:

J- = Low bias

J+ = High bias

Table A-3
Field Duplicate Summary - 2015 Annual Monitoring Report
Western Refining Southwest, Inc. - Bloomfield Terminal

	Parameter	MW-11	MW-11 Dup
		Sample Result	Field Duplicate
TPH (mg/L):	Gasoline Range Organics (GRO)	2.4	2.4
	Diesel Range Organics (DRO)	1.5	1.7
	Motor Oil Range Organics (MRO)	< 2.5	< 2.5
VOCs (ug/L)	1,1,1,2-Tetrachloroethane	< 1.0	< 1.0
	1,1,1-Trichloroethane	< 1.0	< 1.0
	1,1,2,2-Tetrachloroethane	< 2.0	< 2.0
	1,1,2-Trichloroethane	< 1.0	< 1.0
	1,1-Dichloroethane	< 1.0	< 1.0
	1,1-Dichloroethene	< 1.0	< 1.0
	1,1-Dichloropropene	< 1.0	< 1.0
	1,2,3-Trichlorobenzene	< 1.0	< 1.0
	1,2,3-Trichloropropane	< 2.0	< 2.0
	1,2,4-Trichlorobenzene	< 1.0	< 1.0
	1,2,4-Trimethylbenzene	390	370
	1,2-Dibromo-3-chloropropane	< 2.0	< 2.0
	1,2-Dibromoethane (EDB)	< 1.0	< 1.0
	1,2-Dichlorobenzene	< 1.0	< 1.0
	1,2-Dichloroethane (EDC)	< 1.0	< 1.0
	1,2-Dichloropropane	< 1.0	< 1.0
	1,3,5-Trimethylbenzene	< 1.0	< 1.0
	1,3-Dichlorobenzene	< 1.0	< 1.0
	1,3-Dichloropropane	< 1.0	< 1.0
	1,4-Dichlorobenzene	< 1.0	< 1.0
	1-Methylnaphthalene	16	15
	2,2-Dichloropropane	< 2.0	< 2.0
	2-Butanone	< 10	< 10
	2-Chlorotoluene	< 1.0	< 1.0
	2-Hexanone	< 10	< 10
	2-Methylnaphthalene	18	17
	4-Chlorotoluene	< 1.0	< 1.0
	4-Isopropyltoluene	5	4.6
	4-Methyl-2-pentanone	< 10	< 10
	Acetone	< 10	< 10
	Benzene	14	14
	Bromobenzene	< 1.0	< 1.0
	Bromodichloromethane	< 1.0	< 1.0
	Bromoform	< 1.0	< 1.0
	Bromomethane	< 3.0	< 3.0
	Carbon disulfide	< 10	< 10
	Carbon Tetrachloride	< 1.0	< 1.0
	Chlorobenzene	< 1.0	< 1.0
	Chloroethane	< 2.0	< 2.0
	Chloroform	< 1.0	< 1.0
	Chloromethane	< 3.0	< 3.0
	cis-1,2-DCE	< 1.0	< 1.0
	cis-1,3-Dichloropropene	< 1.0	< 1.0
	Dibromochloromethane	< 1.0	< 1.0
	Dibromomethane	< 1.0	< 1.0

Table A-3
Field Duplicate Summary - 2015 Annual Monitoring Report
Western Refining Southwest, Inc. - Bloomfield Terminal

	Parameter	MW-11	MW-11 Dup
		Sample Result	Field Duplicate
	sec-Butylbenzene	12	12
	Styrene	< 1.0	< 1.0
	tert-Butylbenzene	2.5	2.2
	Tetrachloroethene (PCE)	< 1.0	< 1.0
	Toluene	< 1.0	< 1.0
	trans-1,2-DCE	< 1.0	< 1.0
	trans-1,3-Dichloropropene	< 1.0	< 1.0
	Trichloroethene (TCE)	< 1.0	< 1.0
	Trichlorofluoromethane	< 1.0	< 1.0
	Vinyl chloride	< 1.0	< 1.0
	Xylenes, Total	< 1.5	< 1.5
Total Recoverable Metals (mg/L):	Arsenic	0.035	0.038
	Barium	0.92	0.91
	Cadmium	< 0.0020	< 0.0020
	Chromium	< 0.0060	< 0.0060
	Lead	0.0075	< 0.0050
	Selenium	< 0.050	< 0.050
	Silver	< 0.0050	< 0.0050
Dissoved Metals (mg/L)	Arsenic	< 0.020	< 0.020
	Barium	0.85	0.86
	Cadmium	< 0.0020	< 0.0020
	Calcium	96	100
	Chromium	< 0.0060	< 0.0060
	Copper	< 0.0060	< 0.0060
	Iron	9.6	9.4
	Lead	0.006	0.0051
	Magnesium	22	22
	Manganese	1.5	1.5
	Mercury	< 0.00020	< 0.00020
	Potassium	1.5	1.6
	Selenium	< 0.050	< 0.050
	Silver	< 0.0050	< 0.0050
	Sodium	390	400
	Uranium	< 0.10	< 0.10
	Zinc	< 0.020	< 0.020
Other Parameters:	Bicarbonate (As CaCO3)	1038	1046
	Bromide	0.15	0.19
	Carbonate (As CaCO3)	< 2.000	< 2.000
	Chloride	78	80
	Fluoride	0.35	0.34
	Nitrogen, Nitrate (As N)	0.15	0.15
	Nitrogen, Nitrite (As N)	< 0.10	< 0.10
	Phosphorus, Orthophosphate (As P)	< 0.50	< 0.50
	Specific Conductance	2000	2000
	Sulfate	5.7	7.1
	Total Alkalinity (as CaCO3)	1038	1046
	Total Carbon Dioxide	1000	990
	Total Dissolved Solids	1360	1370

Table A-3
Field Duplicate Summary - 2015 Annual Monitoring Report
Western Refining Southwest, Inc. - Bloomfield Terminal

	Parameter	MW-44 Sample Result	MW-44D Field Duplicate
TPH (mg/L):	Gasoline Range Organics (GRO)	<0.050	<0.050
	Diesel Range Organics (DRO)	<0.20	<0.20
	Motor Oil Range Organics (MRO)	<0.25	<0.25
VOCs (ug/L)	1,1,1,2-Tetrachloroethane	< 2.0	< 2.0
	1,1,1-Trichloroethane	< 2.0	< 2.0
	1,1,2,2-Tetrachloroethane	< 4.0	< 4.0
	1,1,2-Trichloroethane	< 2.0	< 2.0
	1,1-Dichloroethane	< 2.0	< 2.0
	1,1-Dichloroethene	< 2.0	< 2.0
	1,1-Dichloropropene	< 2.0	< 2.0
	1,2,3-Trichlorobenzene	< 2.0	< 2.0
	1,2,3-Trichloropropane	< 4.0	< 4.0
	1,2,4-Trichlorobenzene	< 2.0	< 2.0
	1,2,4-Trimethylbenzene	< 2.0	< 2.0
	1,2-Dibromo-3-chloropropane	< 4.0	< 4.0
	1,2-Dibromoethane (EDB)	< 2.0	< 2.0
	1,2-Dichlorobenzene	< 2.0	< 2.0
	1,2-Dichloroethane (EDC)	< 2.0	< 2.0
	1,2-Dichloropropane	< 2.0	< 2.0
	1,3,5-Trimethylbenzene	< 2.0	< 2.0
	1,3-Dichlorobenzene	< 2.0	< 2.0
	1,3-Dichloropropane	< 2.0	< 2.0
	1,4-Dichlorobenzene	< 2.0	< 2.0
	1-Methylnaphthalene	< 8.0	< 8.0
	2,2-Dichloropropane	< 4.0	< 4.0
	2-Butanone	< 20	< 20
	2-Chlorotoluene	< 2.0	< 2.0
	2-Hexanone	< 20	< 20
	2-Methylnaphthalene	< 8.0	< 8.0
	4-Chlorotoluene	< 2.0	< 2.0
	4-Isopropyltoluene	< 2.0	< 2.0
	4-Methyl-2-pentanone	< 20	< 20
	Acetone	< 20	< 20
	Benzene	< 2.0	< 2.0
	Bromobenzene	< 2.0	< 2.0
	Bromodichloromethane	< 2.0	< 2.0
	Bromoform	< 2.0	< 2.0
	Bromomethane	< 6.0	< 6.0
	Carbon disulfide	< 20	< 20
	Carbon Tetrachloride	< 2.0	< 2.0
	Chlorobenzene	< 2.0	< 2.0
	Chloroethane	< 4.0	< 4.0
	Chloroform	< 2.0	< 2.0
	Chloromethane	< 6.0	< 6.0
	cis-1,2-DCE	< 2.0	< 2.0
	cis-1,3-Dichloropropene	< 2.0	< 2.0
	Dibromochloromethane	< 2.0	< 2.0
	Dibromomethane	< 2.0	< 2.0
	Dichlorodifluoromethane	< 2.0	< 2.0

Table A-3
Field Duplicate Summary - 2015 Annual Monitoring Report
Western Refining Southwest, Inc. - Bloomfield Terminal

	Parameter	MW-44 Sample Result	MW-44D Field Duplicate
	n-Propylbenzene	< 2.0	< 2.0
	sec-Butylbenzene	< 2.0	< 2.0
	Styrene	< 2.0	< 2.0
	tert-Butylbenzene	< 2.0	< 2.0
	Tetrachloroethene (PCE)	< 2.0	< 2.0
	Toluene	< 2.0	< 2.0
	trans-1,2-DCE	< 2.0	< 2.0
	trans-1,3-Dichloropropene	< 2.0	< 2.0
	Trichloroethene (TCE)	< 2.0	< 2.0
	Trichlorofluoromethane	< 2.0	< 2.0
	Vinyl chloride	< 2.0	< 2.0
	Xylenes, Total	< 3.0	< 3.0
Total Recoverable Metals (mg/L)	Arsenic	< 0.020	< 0.020
	Barium	0.19	0.33
	Cadmium	< 0.0020	< 0.0020
	Chromium	0.029	0.047
	Lead	0.0053	0.0076
	Selenium	< 0.050	< 0.050
	Silver	< 0.0050	< 0.0050
Dissolved Metals (mg/L)	Arsenic	< 0.020	< 0.020
	Barium	< 0.020	< 0.020
	Cadmium	< 0.0020	< 0.0020
	Calcium	490	490
	Chromium	< 0.0060	< 0.0060
	Copper	< 0.0060	< 0.0060
	Iron	0.048	0.048
	Lead	< 0.0050	< 0.0050
	Magnesium	59	59
	Manganese	1.0	1.0
	Potassium	7.9	7.9
	Selenium	< 0.050	< 0.050
	Silver	< 0.0050	< 0.0050
	Sodium	950	950
	Uranium	< 0.10	< 0.10
	Zinc	0.021	0.021
Other Parameters:	Bicarbonate (As CaCO3)	377.6	379.7
	Bromide	0.47	0.33
	Carbonate (As CaCO3)	< 2.000	< 2.000
	Chloride	55	55
	Fluoride	< 0.10	< 0.10
	Nitrogen, Nitrate (As N)	0.13	< 0.10
	Nitrogen, Nitrite (As N)	< 0.10	< 0.10
	Phosphorus, Orthophosphate (As P)	< 10	< 10
	Specific Conductance	5500	5500
	Sulfate	3000	3100
	Total Alkalinity (as CaCO3)	377.6	379.7
	Total Carbon Dioxide	340	340
	Total Dissolved Solids	4580	4560

Notes:

Table A-3
Field Duplicate Summary - 2015 Annual Monitoring Reprot
Western Refining Southwest, Inc. - Bloomfield Terminal

	Parameter	MW-52 Sample Result	MW-52DUP Field Duplicate
VOCs (ug/L)	Benzene	< 1.0	< 1.0
	Ethylbenzene	< 1.0	< 1.0
	Methyl tert-butyl ether (MTBE)	< 1.0	< 1.0
	Toluene	< 1.0	< 1.0
	Xylenes, Total	< 1.5	< 1.5

Notes:

RPD = Relative percent difference; $[(\text{difference})/(\text{average})] * 100$

NC = Not calculated; RPD values were not calculated for non-detects

ug/L = micrograms per liter

mg/L = milligrams per liter

Table A-3
Field Duplicate Summary - 2015 Annual Monitoring Report
Western Refining Southwest, Inc. - Bloomfield Terminal

	Parameter	Seep #1 Sample Result	Seep #1 Dup Field Duplicate
VOCs (ug/L)	Benzene	< 1.0	< 1.0
	Ethylbenzene	< 1.0	< 1.0
	Methyl tert-butyl ether (MTBE)	13	13
	Toluene	< 1.0	< 1.0
	Xylenes, Total	< 1.5	< 1.5
Other Parameters:	Bicarbonate (As CaCO ₃)	433.1	429.2
	Bromide	3.3	3.3
	Carbonate (As CaCO ₃)	< 2.000	< 2.000
	Chloride	170	170
	Fluoride	< 1.0	< 1.0
	Nitrogen, Nitrate (As N)	< 1.0	< 1.0
	Nitrogen, Nitrite (As N)	< 1.0	< 1.0
	Phosphorus, Orthophosphate (As P)	< 5.0	< 5.0
	Sulfate	1200	1100
	Total Alkalinity (as CaCO ₃)	433.1	429.2
	Total Carbon Dioxide	390	390

Notes:

RPD = Relative percent difference; [(difference)/(average)]* 100

NC = Not calculated; RPD values were not calculated for non-detects

ug/L = micrograms per liter

mg/L = milligrams per liter

Table A-4
Technical Completeness Summary - 2015 Annual Monitoring Report
Western Refining Southwest, Inc. - Bloomfield Terminal

	Parameter	Total Number of Results	Number of Usable Results
TPH (mg/L):	Diesel Range Organics (DRO)	35	35
	Motor Oil Range Organics (MRO)	35	35
	Gasoline Range Organics (GRO)	35	35
VOCs (mg/L):	All VOC Analytes	990	990
Total Recoverable Metals (mg/L):	Arsenic	35	35
	Barium	35	35
	Cadmium	35	35
	Chromium	35	35
	Lead	35	35
	Selenium	35	35
	Silver	35	35
Dissolved Metals (mg/L):	Arsenic	35	35
	Barium	35	35
	Cadmium	35	35
	Calcium	35	35
	Chromium	35	35
	Copper	35	35
	Iron	35	35
	Lead	35	35
	Magnesium	35	35
	Manganese	35	35
	Mercury	35	35
	Potassium	35	35
	Selenium	35	35
	Silver	35	35
	Sodium	35	35
	Uranium	35	35
	Zinc	35	35
Other Parameters:	Bicarbonate (As CaCO3)	37	37
	Bromide	37	37
	Carbonate (As CaCO3)	37	37
	Chloride	37	37
	Fluoride	37	37
	Nitrogen, Nitrate (As N)	37	37
	Nitrogen, Nitrite (As N)	37	37
	Phosphorus, Orthophosphate (As P)	37	37
	Specific Conductance	37	37
	Sulfate	37	37
	Total Alkalinity (as CaCO3)	37	37
	Total Carbon Dioxide	37	37
	Total Dissolved Solids	37	37

Notes:

Number of samples used in completeness calculations includes field duplicates, equipment rinsate, and field blanks.
Percent Technical Compliance = (Number of usable results / Number of reported results) * 100



Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

May 05, 2015

Kelly Robinson

Western Refining Southwest, Inc.

#50 CR 4990

Bloomfield, NM 87413

TEL: (505) 632-4166

FAX (505) 632-3911

RE: Downgradient

OrderNo.: 1504854

Dear Kelly Robinson:

Hall Environmental Analysis Laboratory received 5 sample(s) on 4/21/2015 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to www.hallenvironmental.com or the state specific web sites. In order to properly interpret your results it is imperative that you review this report in its entirety. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. When necessary, data qualifiers are provided on both the sample analysis report and the QC summary report, both sections should be reviewed. All samples are reported, as received, unless otherwise indicated. Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH and residual chlorine are qualified as being analyzed outside of the recommended holding time.

Please don't hesitate to contact HEAL for any additional information or clarifications.

ADHS Cert #AZ0682 -- NMED-DWB Cert #NM9425 -- NMED-Micro Cert #NM0190

Sincerely,

A handwritten signature in black ink, appearing to read "Andy Freeman", with a stylized flourish at the end.

Andy Freeman

Laboratory Manager

4901 Hawkins NE

Albuquerque, NM 87109

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1504854

Date Reported: 5/5/2015

CLIENT: Western Refining Southwest, Inc.

Client Sample ID: MW-12

Project: Downgradient

Collection Date: 4/20/2015 2:00:00 PM

Lab ID: 1504854-001

Matrix: AQUEOUS

Received Date: 4/21/2015 7:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015D: DIESEL RANGE							Analyst: KJH
Diesel Range Organics (DRO)	ND	0.20		mg/L	1	4/23/2015 3:13:27 PM	18804
Motor Oil Range Organics (MRO)	ND	2.5		mg/L	1	4/23/2015 3:13:27 PM	18804
Surr: DNOP	134	69.6-155		%REC	1	4/23/2015 3:13:27 PM	18804
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	ND	0.050		mg/L	1	4/23/2015 6:21:45 PM	R25707
Surr: BFB	81.1	80-120		%REC	1	4/23/2015 6:21:45 PM	R25707
EPA METHOD 8260: VOLATILES SHORT LIST							Analyst: cadg
Benzene	ND	1.0		µg/L	1	4/23/2015 3:58:30 PM	R25709
Toluene	ND	1.0		µg/L	1	4/23/2015 3:58:30 PM	R25709
Ethylbenzene	ND	1.0		µg/L	1	4/23/2015 3:58:30 PM	R25709
Methyl tert-butyl ether (MTBE)	ND	1.0		µg/L	1	4/23/2015 3:58:30 PM	R25709
Xylenes, Total	ND	1.5		µg/L	1	4/23/2015 3:58:30 PM	R25709
Surr: 1,2-Dichloroethane-d4	99.4	70-130		%REC	1	4/23/2015 3:58:30 PM	R25709
Surr: 4-Bromofluorobenzene	98.9	70-130		%REC	1	4/23/2015 3:58:30 PM	R25709
Surr: Dibromofluoromethane	107	70-130		%REC	1	4/23/2015 3:58:30 PM	R25709
Surr: Toluene-d8	100	70-130		%REC	1	4/23/2015 3:58:30 PM	R25709

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.
	E	Value above quantitation range
	J	Analyte detected below quantitation limits
	O	RSD is greater than RSDlimit
	R	RPD outside accepted recovery limits
	S	Spike Recovery outside accepted recovery limits

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
P	Sample pH Not In Range
RL	Reporting Detection Limit

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1504854

Date Reported: 5/5/2015

CLIENT: Western Refining Southwest, Inc.

Client Sample ID: MW-35

Project: Downgradient

Collection Date: 4/20/2015 3:00:00 PM

Lab ID: 1504854-002

Matrix: AQUEOUS

Received Date: 4/21/2015 7:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015D: DIESEL RANGE							Analyst: KJH
Diesel Range Organics (DRO)	0.55	0.20		mg/L	1	4/23/2015 4:34:21 PM	18804
Motor Oil Range Organics (MRO)	ND	2.5		mg/L	1	4/23/2015 4:34:21 PM	18804
Surr: DNOP	116	69.6-155		%REC	1	4/23/2015 4:34:21 PM	18804
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	0.25	0.050		mg/L	1	4/23/2015 6:51:05 PM	R25707
Surr: BFB	102	80-120		%REC	1	4/23/2015 6:51:05 PM	R25707
EPA METHOD 8260: VOLATILES SHORT LIST							Analyst: cadg
Benzene	ND	1.0		µg/L	1	4/23/2015 5:24:51 PM	R25709
Toluene	ND	1.0		µg/L	1	4/23/2015 5:24:51 PM	R25709
Ethylbenzene	ND	1.0		µg/L	1	4/23/2015 5:24:51 PM	R25709
Methyl tert-butyl ether (MTBE)	ND	1.0		µg/L	1	4/23/2015 5:24:51 PM	R25709
Xylenes, Total	ND	1.5		µg/L	1	4/23/2015 5:24:51 PM	R25709
Surr: 1,2-Dichloroethane-d4	104	70-130		%REC	1	4/23/2015 5:24:51 PM	R25709
Surr: 4-Bromofluorobenzene	94.4	70-130		%REC	1	4/23/2015 5:24:51 PM	R25709
Surr: Dibromofluoromethane	104	70-130		%REC	1	4/23/2015 5:24:51 PM	R25709
Surr: Toluene-d8	104	70-130		%REC	1	4/23/2015 5:24:51 PM	R25709

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank	Page 2 of 9
	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded	
	J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit	
	O	RSD is greater than RSDlimit	P	Sample pH Not In Range	
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit	
	S	Spike Recovery outside accepted recovery limits			

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1504854

Date Reported: 5/5/2015

CLIENT: Western Refining Southwest, Inc.

Client Sample ID: MW-37

Project: Downgradient

Collection Date: 4/20/2015 2:15:00 PM

Lab ID: 1504854-003

Matrix: AQUEOUS

Received Date: 4/21/2015 7:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015D: DIESEL RANGE							Analyst: KJH
Diesel Range Organics (DRO)	0.45	0.20		mg/L	1	4/23/2015 5:01:32 PM	18804
Motor Oil Range Organics (MRO)	ND	2.5		mg/L	1	4/23/2015 5:01:32 PM	18804
Surr: DNOP	126	69.6-155		%REC	1	4/23/2015 5:01:32 PM	18804
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	ND	0.050		mg/L	1	4/23/2015 9:17:31 PM	R25707
Surr: BFB	86.5	80-120		%REC	1	4/23/2015 9:17:31 PM	R25707
EPA METHOD 8260: VOLATILES SHORT LIST							Analyst: cadg
Benzene	ND	1.0		µg/L	1	4/23/2015 5:53:45 PM	R25709
Toluene	ND	1.0		µg/L	1	4/23/2015 5:53:45 PM	R25709
Ethylbenzene	ND	1.0		µg/L	1	4/23/2015 5:53:45 PM	R25709
Methyl tert-butyl ether (MTBE)	ND	1.0		µg/L	1	4/23/2015 5:53:45 PM	R25709
Xylenes, Total	ND	1.5		µg/L	1	4/23/2015 5:53:45 PM	R25709
Surr: 1,2-Dichloroethane-d4	103	70-130		%REC	1	4/23/2015 5:53:45 PM	R25709
Surr: 4-Bromofluorobenzene	104	70-130		%REC	1	4/23/2015 5:53:45 PM	R25709
Surr: Dibromofluoromethane	111	70-130		%REC	1	4/23/2015 5:53:45 PM	R25709
Surr: Toluene-d8	101	70-130		%REC	1	4/23/2015 5:53:45 PM	R25709

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank	Page 3 of 9
	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded	
	J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit	
	O	RSD is greater than RSDlimit	P	Sample pH Not In Range	
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit	
	S	Spike Recovery outside accepted recovery limits			

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1504854

Date Reported: 5/5/2015

CLIENT: Western Refining Southwest, Inc.

Client Sample ID: MW-38

Project: Downgradient

Collection Date: 4/20/2015 2:30:00 PM

Lab ID: 1504854-004

Matrix: AQUEOUS

Received Date: 4/21/2015 7:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015D: DIESEL RANGE							Analyst: KJH
Diesel Range Organics (DRO)	ND	0.20		mg/L	1	4/23/2015 5:28:30 PM	18804
Motor Oil Range Organics (MRO)	ND	2.5		mg/L	1	4/23/2015 5:28:30 PM	18804
Surr: DNOP	126	69.6-155		%REC	1	4/23/2015 5:28:30 PM	18804
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	ND	0.050		mg/L	1	4/28/2015 12:59:32 PM	R25814
Surr: BFB	90.7	80-120		%REC	1	4/28/2015 12:59:32 PM	R25814
EPA METHOD 8260: VOLATILES SHORT LIST							Analyst: cadg
Benzene	ND	1.0		µg/L	1	4/23/2015 6:22:33 PM	R25709
Toluene	ND	1.0		µg/L	1	4/23/2015 6:22:33 PM	R25709
Ethylbenzene	ND	1.0		µg/L	1	4/23/2015 6:22:33 PM	R25709
Methyl tert-butyl ether (MTBE)	ND	1.0		µg/L	1	4/23/2015 6:22:33 PM	R25709
Xylenes, Total	ND	1.5		µg/L	1	4/23/2015 6:22:33 PM	R25709
Surr: 1,2-Dichloroethane-d4	107	70-130		%REC	1	4/23/2015 6:22:33 PM	R25709
Surr: 4-Bromofluorobenzene	104	70-130		%REC	1	4/23/2015 6:22:33 PM	R25709
Surr: Dibromofluoromethane	107	70-130		%REC	1	4/23/2015 6:22:33 PM	R25709
Surr: Toluene-d8	106	70-130		%REC	1	4/23/2015 6:22:33 PM	R25709

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank	Page 4 of 9
	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded	
	J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit	
	O	RSD is greater than RSDlimit	P	Sample pH Not In Range	
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit	
	S	Spike Recovery outside accepted recovery limits			

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1504854

Date Reported: 5/5/2015

CLIENT: Western Refining Southwest, Inc.

Client Sample ID: Rinsate

Project: Downgradient

Collection Date: 4/20/2015 3:05:00 PM

Lab ID: 1504854-005

Matrix: AQUEOUS

Received Date: 4/21/2015 7:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260: VOLATILES SHORT LIST						Analyst: cadg	
Benzene	ND	1.0		µg/L	1	4/23/2015 6:51:16 PM	R25709
Toluene	ND	1.0		µg/L	1	4/23/2015 6:51:16 PM	R25709
Ethylbenzene	ND	1.0		µg/L	1	4/23/2015 6:51:16 PM	R25709
Methyl tert-butyl ether (MTBE)	ND	1.0		µg/L	1	4/23/2015 6:51:16 PM	R25709
Xylenes, Total	ND	1.5		µg/L	1	4/23/2015 6:51:16 PM	R25709
Surr: 1,2-Dichloroethane-d4	100	70-130		%REC	1	4/23/2015 6:51:16 PM	R25709
Surr: 4-Bromofluorobenzene	103	70-130		%REC	1	4/23/2015 6:51:16 PM	R25709
Surr: Dibromofluoromethane	106	70-130		%REC	1	4/23/2015 6:51:16 PM	R25709
Surr: Toluene-d8	103	70-130		%REC	1	4/23/2015 6:51:16 PM	R25709

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank	Page 5 of 9
	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded	
	J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit	
	O	RSD is greater than RSDlimit	P	Sample pH Not In Range	
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit	
	S	Spike Recovery outside accepted recovery limits			

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1504854

05-May-15

Client: Western Refining Southwest, Inc.

Project: Downgradient

Sample ID MB-18804	SampType: MBLK		TestCode: EPA Method 8015D: Diesel Range							
Client ID: PBW	Batch ID: 18804		RunNo: 25693							
Prep Date: 4/21/2015	Analysis Date: 4/23/2015		SeqNo: 762153		Units: mg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	0.20								
Motor Oil Range Organics (MRO)	ND	2.5								
Surr: DNOP	0.54		0.5000		108	69.6	155			

Sample ID LCS-18804	SampType: LCS		TestCode: EPA Method 8015D: Diesel Range							
Client ID: LCSW	Batch ID: 18804		RunNo: 25693							
Prep Date: 4/21/2015	Analysis Date: 4/23/2015		SeqNo: 762154		Units: mg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	3.1	0.20	2.500	0	123	65.8	162			
Surr: DNOP	0.30		0.2500		119	69.6	155			

Sample ID 1504854-001CMS	SampType: MS		TestCode: EPA Method 8015D: Diesel Range							
Client ID: MW-12	Batch ID: 18804		RunNo: 25693							
Prep Date: 4/21/2015	Analysis Date: 4/23/2015		SeqNo: 762156		Units: mg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	3.1	0.20	2.500	0.1379	119	82.6	172			
Surr: DNOP	0.31		0.2500		123	69.6	155			

Sample ID 1504854-001CMSD	SampType: MSD		TestCode: EPA Method 8015D: Diesel Range							
Client ID: MW-12	Batch ID: 18804		RunNo: 25693							
Prep Date: 4/21/2015	Analysis Date: 4/23/2015		SeqNo: 762157		Units: mg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	3.4	0.20	2.500	0.1379	131	82.6	172	8.55	33.9	
Surr: DNOP	0.32		0.2500		127	69.6	155	0	0	

Qualifiers:

* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank
E Value above quantitation range	H Holding times for preparation or analysis exceeded
J Analyte detected below quantitation limits	ND Not Detected at the Reporting Limit
O RSD is greater than RSDlimit	P Sample pH Not In Range
R RPD outside accepted recovery limits	RL Reporting Detection Limit
S Spike Recovery outside accepted recovery limits	

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1504854

05-May-15

Client: Western Refining Southwest, Inc.

Project: Downgradient

Sample ID	5ML RBB		SampType: MBLK		TestCode: EPA Method 8015D: Gasoline Range					
Client ID:	PBW		Batch ID: R25707		RunNo: 25707					
Prep Date:			Analysis Date: 4/23/2015		SeqNo: 762025		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	0.050								
Surr: BFB	17		20.00		83.6	80	120			

Sample ID	2.5UG GRO LCSB		SampType: LCS		TestCode: EPA Method 8015D: Gasoline Range					
Client ID:	LCSW		Batch ID: R25707		RunNo: 25707					
Prep Date:			Analysis Date: 4/23/2015		SeqNo: 762026		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	0.49	0.050	0.5000	0	98.2	80	120			
Surr: BFB	18		20.00		88.7	80	120			

Sample ID	5ML RB		SampType: MBLK		TestCode: EPA Method 8015D: Gasoline Range					
Client ID:	PBW		Batch ID: R25814		RunNo: 25814					
Prep Date:			Analysis Date: 4/28/2015		SeqNo: 765507		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	0.050								
Surr: BFB	18		20.00		90.1	80	120			

Sample ID	2.5UG GRO LCS		SampType: LCS		TestCode: EPA Method 8015D: Gasoline Range					
Client ID:	LCSW		Batch ID: R25814		RunNo: 25814					
Prep Date:			Analysis Date: 4/28/2015		SeqNo: 765508		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	0.49	0.050	0.5000	0	98.2	80	120			
Surr: BFB	19		20.00		97.3	80	120			

Qualifiers:

* Value exceeds Maximum Contaminant Level.
E Value above quantitation range
J Analyte detected below quantitation limits
O RSD is greater than RSDlimit
R RPD outside accepted recovery limits
S Spike Recovery outside accepted recovery limits

B Analyte detected in the associated Method Blank
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
P Sample pH Not In Range
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1504854

05-May-15

Client: Western Refining Southwest, Inc.

Project: Downgradient

Sample ID	5mL rb	SampType:	MBLK	TestCode:	EPA Method 8260: Volatiles Short List					
Client ID:	PBW	Batch ID:	R25709	RunNo:	25709					
Prep Date:		Analysis Date:	4/23/2015	SeqNo:	762260	Units:	µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	1.0								
Toluene	ND	1.0								
Ethylbenzene	ND	1.0								
Methyl tert-butyl ether (MTBE)	ND	1.0								
Xylenes, Total	ND	1.5								
Surr: 1,2-Dichloroethane-d4	10		10.00		103	70	130			
Surr: 4-Bromofluorobenzene	11		10.00		105	70	130			
Surr: Dibromofluoromethane	11		10.00		107	70	130			
Surr: Toluene-d8	10		10.00		105	70	130			

Sample ID	100ng lcs	SampType:	LCS	TestCode:	EPA Method 8260: Volatiles Short List					
Client ID:	LCSW	Batch ID:	R25709	RunNo:	25709					
Prep Date:		Analysis Date:	4/23/2015	SeqNo:	762261	Units:	µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	22	1.0	20.00	0	112	70	130			
Toluene	20	1.0	20.00	0	101	70	130			
Surr: 1,2-Dichloroethane-d4	10		10.00		103	70	130			
Surr: 4-Bromofluorobenzene	10		10.00		105	70	130			
Surr: Dibromofluoromethane	11		10.00		108	70	130			
Surr: Toluene-d8	10		10.00		100	70	130			

Sample ID	1504854-001a ms	SampType:	MS	TestCode:	EPA Method 8260: Volatiles Short List					
Client ID:	MW-12	Batch ID:	R25709	RunNo:	25709					
Prep Date:		Analysis Date:	4/23/2015	SeqNo:	762263	Units:	µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	22	1.0	20.00	0	112	70	130			
Toluene	21	1.0	20.00	0	103	70	130			
Surr: 1,2-Dichloroethane-d4	11		10.00		107	70	130			
Surr: 4-Bromofluorobenzene	11		10.00		106	70	130			
Surr: Dibromofluoromethane	11		10.00		112	70	130			
Surr: Toluene-d8	10		10.00		103	70	130			

Sample ID	1504854-001a msd	SampType:	MSD	TestCode:	EPA Method 8260: Volatiles Short List					
Client ID:	MW-12	Batch ID:	R25709	RunNo:	25709					
Prep Date:		Analysis Date:	4/23/2015	SeqNo:	762264	Units:	µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	21	1.0	20.00	0	103	70	130	8.29	20	

Qualifiers:

* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank
E Value above quantitation range	H Holding times for preparation or analysis exceeded
J Analyte detected below quantitation limits	ND Not Detected at the Reporting Limit
O RSD is greater than RSDlimit	P Sample pH Not In Range
R RPD outside accepted recovery limits	RL Reporting Detection Limit
S Spike Recovery outside accepted recovery limits	

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1504854

05-May-15

Client: Western Refining Southwest, Inc.

Project: Downgradient

Sample ID	1504854-001a msd	SampType:	MSD	TestCode:	EPA Method 8260: Volatiles Short List						
Client ID:	MW-12	Batch ID:	R25709	RunNo:	25709						
Prep Date:		Analysis Date:	4/23/2015	SeqNo:	762264	Units:	µg/L				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Toluene	20	1.0	20.00	0	101	70	130	1.92	20		
Surr: 1,2-Dichloroethane-d4	10		10.00		100	70	130	0	0		
Surr: 4-Bromofluorobenzene	11		10.00		108	70	130	0	0		
Surr: Dibromofluoromethane	11		10.00		107	70	130	0	0		
Surr: Toluene-d8	10		10.00		103	70	130	0	0		

Qualifiers:

* Value exceeds Maximum Contaminant Level.
E Value above quantitation range
J Analyte detected below quantitation limits
O RSD is greater than RSDlimit
R RPD outside accepted recovery limits
S Spike Recovery outside accepted recovery limits

B Analyte detected in the associated Method Blank
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
P Sample pH Not In Range
RL Reporting Detection Limit

Sample Log-In Check List

Client Name: Western Refining Southw

Work Order Number: 1504854

RcptNo: 1

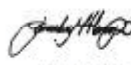
Received by/date:



04/21/15

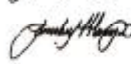
Logged By: Lindsay Mangin

4/21/2015 7:30:00 AM



Completed By: Lindsay Mangin

4/21/2015 8:49:56 AM



Reviewed By:



04/21/15

Chain of Custody

1. Custody seals intact on sample bottles?

Yes ☐

No ☐

Not Present ☒

2. Is Chain of Custody complete?

Yes ☒

No ☐

Not Present ☐

3. How was the sample delivered?

Courier

Log In

4. Was an attempt made to cool the samples?

Yes ☒

No ☐

NA ☐

5. Were all samples received at a temperature of >0° C to 6.0°C

Yes ☒

No ☐

NA ☐

6. Sample(s) in proper container(s)?

Yes ☒

No ☐

7. Sufficient sample volume for indicated test(s)?

Yes ☒

No ☐

8. Are samples (except VOA and ONG) properly preserved?

Yes ☒

No ☐

9. Was preservative added to bottles?

Yes ☐

No ☒

NA ☐

10. VOA vials have zero headspace?

Yes ☒

No ☐

No VOA Vials ☐

11. Were any sample containers received broken?

Yes ☐

No ☒

12. Does paperwork match bottle labels?

Yes ☒

No ☐

(Note discrepancies on chain of custody)

13. Are matrices correctly identified on Chain of Custody?

Yes ☒

No ☐

14. Is it clear what analyses were requested?

Yes ☒

No ☐

15. Were all holding times able to be met?

Yes ☒

No ☐

(If no, notify customer for authorization.)

of preserved
bottles checked
for pH:

(<2 or >12 unless noted)

Adjusted? _____

Checked by: _____

Special Handling (if applicable)

16. Was client notified of all discrepancies with this order?

Yes ☐

No ☐

NA ☒

Person Notified:

Date

By Whom:

Via:

☐ eMail

☐ Phone

☐ Fax

☐ In Person

Regarding:

Client Instructions:

17. Additional remarks:

18. Cooler Information

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	3.3	Good	Yes			

ANALYTICAL METHODS AND TARGET ANALYTES

VOCs (EPA Method 8260B) ⁽¹⁾
- Target List
Benzene
Toluene
Ethylbenzene
Xylenes
Methyl tert butyl ether (MTBE)
SVOCs - (EPA Method 8270)
- Method List
TPH-GRO (EPA Method 8015B)
- Gasoline Range Organics
TPH-DRO (EPA Method 8015B)
- Diesel Range Organics
- Motor Oil Range Organics
Total Carbon Dioxide (Laboratory Calculated)
- Dissolved CO ₂
Specific Conductivity (EPA Method 120.1 or field measurement)
- Specific conductance
TDS (EPA Method 160.1 or field measurement)
- Total dissolved solids
General Chemistry - Anions (EPA Method 300.0)
Fluoride
Chloride
Bromide
Nitrogen, Nitrite (as N)
Nitrogen, Nitrate (as N)
Phosphorous, Orthophosphate (As P)
Sulfate
General Chemistry - Alkalinity (EPA Method 310.1)
Alkalinity, Total
Carbonate
Bicarbonate

Total Recoverable Metals (EPA Method 6010B/7470)
- Target List (not applicable to River Terrace Sampling Events)
Arsenic
Barium
Cadmium
Chromium
Lead
Mercury (DW-1 ONLY)
Manganese
Mercury
Selenium
Silver
- Target List (for River Terrace Sampling Events Only)
Lead
Mercury (DW-1 ONLY)
Dissolved Metals (EPA Method 6010B / 7470)
- Target List (for Refinery Complex, Outfalls, and River)
Arsenic
Barium
Cadmium
Calcium
Chromium
Copper
Iron
Lead
Magnesium
Manganese
Mercury
Potassium
Selenium
Silver
Sodium
Uranium
Zinc

TPH = total petroleum hydrocarbons
GRO = gasoline range organics
VOCs = volatile organic compounds
DRO = diesel range organics
TDS = total dissolved solids

NOTES:

- (1) VOCs Target List for River Terrace samples are analyzed by EPA Method 8021B per NMED's letter Approval with Direction dated June 16, 2009.
- (2) Target List for San Juan River Terrace Monitoring Wells and Piezometer Wells only, per the River Terrace Bioventing System Monitoring Plan.



Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

April 29, 2015

Kelly Robinson

Western Refining Southwest, Inc.

#50 CR 4990

Bloomfield, NM 87413

TEL: (505) 632-4166

FAX (505) 632-3911

RE: Cross-Gradient Wells

OrderNo.: 1504855

Dear Kelly Robinson:

Hall Environmental Analysis Laboratory received 3 sample(s) on 4/21/2015 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to www.hallenvironmental.com or the state specific web sites. In order to properly interpret your results it is imperative that you review this report in its entirety. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. When necessary, data qualifiers are provided on both the sample analysis report and the QC summary report, both sections should be reviewed. All samples are reported, as received, unless otherwise indicated. Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH and residual chlorine are qualified as being analyzed outside of the recommended holding time.

Please don't hesitate to contact HEAL for any additional information or clarifications.

ADHS Cert #AZ0682 -- NMED-DWB Cert #NM9425 -- NMED-Micro Cert #NM0190

Sincerely,

A handwritten signature in black ink, appearing to read "Andy Freeman", with a stylized flourish at the end.

Andy Freeman

Laboratory Manager

4901 Hawkins NE

Albuquerque, NM 87109

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1504855

Date Reported: 4/29/2015

CLIENT: Western Refining Southwest, Inc.

Client Sample ID: MW-1

Project: Cross-Gradient Wells

Collection Date: 4/20/2015 12:45:00 PM

Lab ID: 1504855-001

Matrix: AQUEOUS

Received Date: 4/21/2015 7:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015D: DIESEL RANGE							Analyst: KJH
Diesel Range Organics (DRO)	ND	0.20		mg/L	1	4/23/2015 5:55:07 PM	18804
Motor Oil Range Organics (MRO)	ND	2.5		mg/L	1	4/23/2015 5:55:07 PM	18804
Surr: DNOP	130	69.6-155		%REC	1	4/23/2015 5:55:07 PM	18804
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	ND	0.050		mg/L	1	4/23/2015 10:16:11 PM	R25707
Surr: BFB	83.4	80-120		%REC	1	4/23/2015 10:16:11 PM	R25707
EPA METHOD 8260: VOLATILES SHORT LIST							Analyst: cadg
Benzene	ND	1.0		µg/L	1	4/23/2015 7:20:00 PM	R25709
Toluene	ND	1.0		µg/L	1	4/23/2015 7:20:00 PM	R25709
Ethylbenzene	ND	1.0		µg/L	1	4/23/2015 7:20:00 PM	R25709
Methyl tert-butyl ether (MTBE)	ND	1.0		µg/L	1	4/23/2015 7:20:00 PM	R25709
Xylenes, Total	ND	1.5		µg/L	1	4/23/2015 7:20:00 PM	R25709
Surr: 1,2-Dichloroethane-d4	97.3	70-130		%REC	1	4/23/2015 7:20:00 PM	R25709
Surr: 4-Bromofluorobenzene	104	70-130		%REC	1	4/23/2015 7:20:00 PM	R25709
Surr: Dibromofluoromethane	98.4	70-130		%REC	1	4/23/2015 7:20:00 PM	R25709
Surr: Toluene-d8	107	70-130		%REC	1	4/23/2015 7:20:00 PM	R25709

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
	J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
	O	RSD is greater than RSDlimit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	Spike Recovery outside accepted recovery limits		

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1504855

Date Reported: 4/29/2015

CLIENT: Western Refining Southwest, Inc.

Client Sample ID: MW-13

Project: Cross-Gradient Wells

Collection Date: 4/20/2015 12:30:00 PM

Lab ID: 1504855-002

Matrix: AQUEOUS

Received Date: 4/21/2015 7:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260: VOLATILES SHORT LIST						Analyst: cadg	
Benzene	ND	1.0		µg/L	1	4/23/2015 7:48:44 PM	R25709
Toluene	ND	1.0		µg/L	1	4/23/2015 7:48:44 PM	R25709
Ethylbenzene	ND	1.0		µg/L	1	4/23/2015 7:48:44 PM	R25709
Methyl tert-butyl ether (MTBE)	ND	1.0		µg/L	1	4/23/2015 7:48:44 PM	R25709
Xylenes, Total	ND	1.5		µg/L	1	4/23/2015 7:48:44 PM	R25709
Surr: 1,2-Dichloroethane-d4	103	70-130		%REC	1	4/23/2015 7:48:44 PM	R25709
Surr: 4-Bromofluorobenzene	105	70-130		%REC	1	4/23/2015 7:48:44 PM	R25709
Surr: Dibromofluoromethane	105	70-130		%REC	1	4/23/2015 7:48:44 PM	R25709
Surr: Toluene-d8	100	70-130		%REC	1	4/23/2015 7:48:44 PM	R25709

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
	J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
	O	RSD is greater than RSDlimit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	Spike Recovery outside accepted recovery limits		

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1504855

Date Reported: 4/29/2015

CLIENT: Western Refining Southwest, Inc.

Client Sample ID: MW-33

Project: Cross-Gradient Wells

Collection Date: 4/20/2015 1:45:00 PM

Lab ID: 1504855-003

Matrix: AQUEOUS

Received Date: 4/21/2015 7:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015D: DIESEL RANGE							Analyst: KJH
Diesel Range Organics (DRO)	ND	0.20		mg/L	1	4/23/2015 6:22:06 PM	18804
Motor Oil Range Organics (MRO)	ND	2.5		mg/L	1	4/23/2015 6:22:06 PM	18804
Surr: DNOP	133	69.6-155		%REC	1	4/23/2015 6:22:06 PM	18804
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	ND	0.050		mg/L	1	4/23/2015 10:45:29 PM	R25707
Surr: BFB	82.5	80-120		%REC	1	4/23/2015 10:45:29 PM	R25707
EPA METHOD 8260: VOLATILES SHORT LIST							Analyst: cadg
Benzene	ND	1.0		µg/L	1	4/23/2015 8:17:43 PM	R25709
Toluene	ND	1.0		µg/L	1	4/23/2015 8:17:43 PM	R25709
Ethylbenzene	ND	1.0		µg/L	1	4/23/2015 8:17:43 PM	R25709
Methyl tert-butyl ether (MTBE)	ND	1.0		µg/L	1	4/23/2015 8:17:43 PM	R25709
Xylenes, Total	ND	1.5		µg/L	1	4/23/2015 8:17:43 PM	R25709
Surr: 1,2-Dichloroethane-d4	96.6	70-130		%REC	1	4/23/2015 8:17:43 PM	R25709
Surr: 4-Bromofluorobenzene	103	70-130		%REC	1	4/23/2015 8:17:43 PM	R25709
Surr: Dibromofluoromethane	100	70-130		%REC	1	4/23/2015 8:17:43 PM	R25709
Surr: Toluene-d8	106	70-130		%REC	1	4/23/2015 8:17:43 PM	R25709

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank	Page 3 of 6
	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded	
	J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit	
	O	RSD is greater than RSDlimit	P	Sample pH Not In Range	
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit	
	S	Spike Recovery outside accepted recovery limits			

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1504855

29-Apr-15

Client: Western Refining Southwest, Inc.

Project: Cross-Gradient Wells

Sample ID	MB-18804		SampType: MBLK		TestCode: EPA Method 8015D: Diesel Range					
Client ID:	PBW		Batch ID: 18804		RunNo: 25693					
Prep Date:	4/21/2015		Analysis Date: 4/23/2015		SeqNo: 762153		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	0.20								
Motor Oil Range Organics (MRO)	ND	2.5								
Surr: DNOP	0.54		0.5000		108	69.6	155			

Sample ID	LCS-18804		SampType: LCS		TestCode: EPA Method 8015D: Diesel Range					
Client ID:	LCSW		Batch ID: 18804		RunNo: 25693					
Prep Date:	4/21/2015		Analysis Date: 4/23/2015		SeqNo: 762154		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	3.1	0.20	2.500	0	123	65.8	162			
Surr: DNOP	0.30		0.2500		119	69.6	155			

Qualifiers:

* Value exceeds Maximum Contaminant Level.
E Value above quantitation range
J Analyte detected below quantitation limits
O RSD is greater than RSDlimit
R RPD outside accepted recovery limits
S Spike Recovery outside accepted recovery limits

B Analyte detected in the associated Method Blank
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
P Sample pH Not In Range
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1504855

29-Apr-15

Client: Western Refining Southwest, Inc.

Project: Cross-Gradient Wells

Sample ID	5ML RBB		SampType: MBLK		TestCode: EPA Method 8015D: Gasoline Range					
Client ID:	PBW		Batch ID: R25707		RunNo: 25707					
Prep Date:			Analysis Date: 4/23/2015		SeqNo: 762025		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	0.050								
Surr: BFB	17		20.00		83.6	80	120			

Sample ID	2.5UG GRO LCSB		SampType: LCS		TestCode: EPA Method 8015D: Gasoline Range					
Client ID:	LCSW		Batch ID: R25707		RunNo: 25707					
Prep Date:			Analysis Date: 4/23/2015		SeqNo: 762026		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	0.49	0.050	0.5000	0	98.2	80	120			
Surr: BFB	18		20.00		88.7	80	120			

Qualifiers:

* Value exceeds Maximum Contaminant Level.
E Value above quantitation range
J Analyte detected below quantitation limits
O RSD is greater than RSDlimit
R RPD outside accepted recovery limits
S Spike Recovery outside accepted recovery limits

B Analyte detected in the associated Method Blank
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
P Sample pH Not In Range
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1504855

29-Apr-15

Client: Western Refining Southwest, Inc.

Project: Cross-Gradient Wells

Sample ID	5mL rb	SampType:	MBLK	TestCode:	EPA Method 8260: Volatiles Short List					
Client ID:	PBW	Batch ID:	R25709	RunNo:	25709					
Prep Date:		Analysis Date:	4/23/2015	SeqNo:	762260	Units:	µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	1.0								
Toluene	ND	1.0								
Ethylbenzene	ND	1.0								
Methyl tert-butyl ether (MTBE)	ND	1.0								
Xylenes, Total	ND	1.5								
Surr: 1,2-Dichloroethane-d4	10		10.00		103	70	130			
Surr: 4-Bromofluorobenzene	11		10.00		105	70	130			
Surr: Dibromofluoromethane	11		10.00		107	70	130			
Surr: Toluene-d8	10		10.00		105	70	130			

Sample ID	100ng lcs	SampType:	LCS	TestCode:	EPA Method 8260: Volatiles Short List					
Client ID:	LCSW	Batch ID:	R25709	RunNo:	25709					
Prep Date:		Analysis Date:	4/23/2015	SeqNo:	762261	Units:	µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	22	1.0	20.00	0	112	70	130			
Toluene	20	1.0	20.00	0	101	70	130			
Surr: 1,2-Dichloroethane-d4	10		10.00		103	70	130			
Surr: 4-Bromofluorobenzene	10		10.00		105	70	130			
Surr: Dibromofluoromethane	11		10.00		108	70	130			
Surr: Toluene-d8	10		10.00		100	70	130			

Qualifiers:

* Value exceeds Maximum Contaminant Level.
E Value above quantitation range
J Analyte detected below quantitation limits
O RSD is greater than RSDlimit
R RPD outside accepted recovery limits
S Spike Recovery outside accepted recovery limits

B Analyte detected in the associated Method Blank
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
P Sample pH Not In Range
RL Reporting Detection Limit



Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

Sample Log-In Check List

Client Name: Western Refining Southw

Work Order Number: 1504855

RcptNo: 1

Received by/date:

Logged By: Lindsay Mangin

4/21/2015 7:30:00 AM

Completed By: Lindsay Mangin

4/21/2015 9:16:11 AM

Reviewed By:

Chain of Custody

1. Custody seals intact on sample bottles?

Yes ☐

No ☐

Not Present ☒

2. Is Chain of Custody complete?

Yes ☒

No ☐

Not Present ☐

3. How was the sample delivered?

Courier

Log In

4. Was an attempt made to cool the samples?

Yes ☒

No ☐

NA ☐

5. Were all samples received at a temperature of $>0^{\circ}\text{C}$ to 6.0°C ?

Yes ☒

No ☐

NA ☐

6. Sample(s) in proper container(s)?

Yes ☒

No ☐

7. Sufficient sample volume for indicated test(s)?

Yes ☒

No ☐

8. Are samples (except VOA and ONG) properly preserved?

Yes ☒

No ☐

9. Was preservative added to bottles?

Yes ☐

No ☒

NA ☐

10. VOA vials have zero headspace?

Yes ☒

No ☐

No VOA Vials ☐

11. Were any sample containers received broken?

Yes ☐

No ☒

of preserved
bottles checked
for pH:

(<2 or >12 unless noted)

12. Does paperwork match bottle labels?

(Note discrepancies on chain of custody)

Yes ☒

No ☐

13. Are matrices correctly identified on Chain of Custody?

Yes ☒

No ☐

14. Is it clear what analyses were requested?

Yes ☒

No ☐

15. Were all holding times able to be met?

(If no, notify customer for authorization.)

Yes ☒

No ☐

Adjusted? _____

Checked by: _____

Special Handling (if applicable)

16. Was client notified of all discrepancies with this order?

Yes ☐

No ☐

NA ☒

Person Notified:

Date

By Whom:

Via:

☐

eMail

☐

Phone

☐

Fax

☐

In Person

Regarding:

Client Instructions:

17. Additional remarks:

18. Cooler Information

Cooler No	Temp $^{\circ}\text{C}$	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	3.3	Good	Yes			



Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

April 29, 2015

Kelly Robinson

Western Refining Southwest, Inc.

#50 CR 4990

Bloomfield, NM 87413

TEL: (505) 632-4166

FAX (505) 632-3911

RE: Refinery Wells

OrderNo.: 1504863

Dear Kelly Robinson:

Hall Environmental Analysis Laboratory received 3 sample(s) on 4/21/2015 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to www.hallenvironmental.com or the state specific web sites. In order to properly interpret your results it is imperative that you review this report in its entirety. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. When necessary, data qualifiers are provided on both the sample analysis report and the QC summary report, both sections should be reviewed. All samples are reported, as received, unless otherwise indicated. Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH and residual chlorine are qualified as being analyzed outside of the recommended holding time.

Please don't hesitate to contact HEAL for any additional information or clarifications.

ADHS Cert #AZ0682 -- NMED-DWB Cert #NM9425 -- NMED-Micro Cert #NM0190

Sincerely,

A handwritten signature in black ink, appearing to read "Andy Freeman", with a stylized flourish at the end.

Andy Freeman

Laboratory Manager

4901 Hawkins NE

Albuquerque, NM 87109

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1504863

Date Reported: 4/29/2015

CLIENT: Western Refining Southwest, Inc.

Client Sample ID: MW-52

Project: Refinery Wells

Collection Date: 4/20/2015 12:15:00 PM

Lab ID: 1504863-001

Matrix: AQUEOUS

Received Date: 4/21/2015 7:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260: VOLATILES SHORT LIST						Analyst: cadg	
Benzene	ND	1.0		µg/L	1	4/24/2015 4:53:45 PM	R25753
Toluene	ND	1.0		µg/L	1	4/24/2015 4:53:45 PM	R25753
Ethylbenzene	ND	1.0		µg/L	1	4/24/2015 4:53:45 PM	R25753
Methyl tert-butyl ether (MTBE)	ND	1.0		µg/L	1	4/24/2015 4:53:45 PM	R25753
Xylenes, Total	ND	1.5		µg/L	1	4/24/2015 4:53:45 PM	R25753
Surr: 1,2-Dichloroethane-d4	99.3	70-130		%REC	1	4/24/2015 4:53:45 PM	R25753
Surr: 4-Bromofluorobenzene	102	70-130		%REC	1	4/24/2015 4:53:45 PM	R25753
Surr: Dibromofluoromethane	99.4	70-130		%REC	1	4/24/2015 4:53:45 PM	R25753
Surr: Toluene-d8	102	70-130		%REC	1	4/24/2015 4:53:45 PM	R25753

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
	J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
	O	RSD is greater than RSDlimit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	Spike Recovery outside accepted recovery limits		

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1504863

Date Reported: 4/29/2015

CLIENT: Western Refining Southwest, Inc.

Client Sample ID: MW-52DUP

Project: Refinery Wells

Collection Date: 4/20/2015 12:15:00 PM

Lab ID: 1504863-002

Matrix: AQUEOUS

Received Date: 4/21/2015 7:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260: VOLATILES SHORT LIST						Analyst: cadg	
Benzene	ND	1.0		µg/L	1	4/24/2015 5:22:33 PM	R25753
Toluene	ND	1.0		µg/L	1	4/24/2015 5:22:33 PM	R25753
Ethylbenzene	ND	1.0		µg/L	1	4/24/2015 5:22:33 PM	R25753
Methyl tert-butyl ether (MTBE)	ND	1.0		µg/L	1	4/24/2015 5:22:33 PM	R25753
Xylenes, Total	ND	1.5		µg/L	1	4/24/2015 5:22:33 PM	R25753
Surr: 1,2-Dichloroethane-d4	96.0	70-130		%REC	1	4/24/2015 5:22:33 PM	R25753
Surr: 4-Bromofluorobenzene	105	70-130		%REC	1	4/24/2015 5:22:33 PM	R25753
Surr: Dibromofluoromethane	99.8	70-130		%REC	1	4/24/2015 5:22:33 PM	R25753
Surr: Toluene-d8	105	70-130		%REC	1	4/24/2015 5:22:33 PM	R25753

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
	J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
	O	RSD is greater than RSDlimit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	Spike Recovery outside accepted recovery limits		

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1504863

Date Reported: 4/29/2015

CLIENT: Western Refining Southwest, Inc.

Client Sample ID: Trip Blank

Project: Refinery Wells

Collection Date:

Lab ID: 1504863-003

Matrix: TRIP BLANK

Received Date: 4/21/2015 7:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260: VOLATILES SHORT LIST						Analyst: cadg	
Benzene	ND	1.0		µg/L	1	4/24/2015 5:51:18 PM	R25753
Toluene	ND	1.0		µg/L	1	4/24/2015 5:51:18 PM	R25753
Ethylbenzene	ND	1.0		µg/L	1	4/24/2015 5:51:18 PM	R25753
Methyl tert-butyl ether (MTBE)	ND	1.0		µg/L	1	4/24/2015 5:51:18 PM	R25753
Xylenes, Total	ND	1.5		µg/L	1	4/24/2015 5:51:18 PM	R25753
Surr: 1,2-Dichloroethane-d4	101	70-130		%REC	1	4/24/2015 5:51:18 PM	R25753
Surr: 4-Bromofluorobenzene	102	70-130		%REC	1	4/24/2015 5:51:18 PM	R25753
Surr: Dibromofluoromethane	107	70-130		%REC	1	4/24/2015 5:51:18 PM	R25753
Surr: Toluene-d8	100	70-130		%REC	1	4/24/2015 5:51:18 PM	R25753

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
	J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
	O	RSD is greater than RSDlimit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	Spike Recovery outside accepted recovery limits		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1504863

29-Apr-15

Client: Western Refining Southwest, Inc.

Project: Refinery Wells

Sample ID	5mL rb	SampType:	MBLK	TestCode:	EPA Method 8260: Volatiles Short List					
Client ID:	PBW	Batch ID:	R25753	RunNo:	25753					
Prep Date:		Analysis Date:	4/24/2015	SeqNo:	763372	Units:	µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	1.0								
Toluene	ND	1.0								
Ethylbenzene	ND	1.0								
Methyl tert-butyl ether (MTBE)	ND	1.0								
Xylenes, Total	ND	1.5								
Surr: 1,2-Dichloroethane-d4	10		10.00		103	70	130			
Surr: 4-Bromofluorobenzene	11		10.00		107	70	130			
Surr: Dibromofluoromethane	11		10.00		106	70	130			
Surr: Toluene-d8	11		10.00		106	70	130			

Sample ID	100ng lcs	SampType:	LCS	TestCode:	EPA Method 8260: Volatiles Short List					
Client ID:	LCSW	Batch ID:	R25753	RunNo:	25753					
Prep Date:		Analysis Date:	4/24/2015	SeqNo:	763373	Units:	µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	21	1.0	20.00	0	104	70	130			
Toluene	19	1.0	20.00	0	96.5	70	130			
Surr: 1,2-Dichloroethane-d4	9.8		10.00		97.8	70	130			
Surr: 4-Bromofluorobenzene	11		10.00		109	70	130			
Surr: Dibromofluoromethane	10		10.00		101	70	130			
Surr: Toluene-d8	10		10.00		101	70	130			

Qualifiers:

* Value exceeds Maximum Contaminant Level.
E Value above quantitation range
J Analyte detected below quantitation limits
O RSD is greater than RSDlimit
R RPD outside accepted recovery limits
S Spike Recovery outside accepted recovery limits

B Analyte detected in the associated Method Blank
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
P Sample pH Not In Range
RL Reporting Detection Limit



Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

Sample Log-In Check List

Client Name: Western Refining Southw

Work Order Number: 1504863

RcptNo: 1

Received by/date:

Logged By: Lindsay Mangin

4/21/2015 7:30:00 AM

Completed By: Lindsay Mangin

4/21/2015 10:01:14 AM

Reviewed By:

Chain of Custody

1. Custody seals intact on sample bottles?

Yes ☐

No ☐

Not Present ☒

2. Is Chain of Custody complete?

Yes ☒

No ☐

Not Present ☐

3. How was the sample delivered?

Courier

Log In

4. Was an attempt made to cool the samples?

Yes ☒

No ☐

NA ☐

5. Were all samples received at a temperature of $>0^{\circ}\text{C}$ to 6.0°C ?

Yes ☒

No ☐

NA ☐

6. Sample(s) in proper container(s)?

Yes ☒

No ☐

7. Sufficient sample volume for indicated test(s)?

Yes ☒

No ☐

8. Are samples (except VOA and ONG) properly preserved?

Yes ☒

No ☐

9. Was preservative added to bottles?

Yes ☐

No ☒

NA ☐

10. VOA vials have zero headspace?

Yes ☒

No ☐

No VOA Vials ☐

11. Were any sample containers received broken?

Yes ☐

No ☒

of preserved
bottles checked
for pH:

(<2 or >12 unless noted)

12. Does paperwork match bottle labels?

Yes ☒

No ☐

(Note discrepancies on chain of custody)

13. Are matrices correctly identified on Chain of Custody?

Yes ☒

No ☐

14. Is it clear what analyses were requested?

Yes ☒

No ☐

15. Were all holding times able to be met?

Yes ☒

No ☐

(if no, notify customer for authorization.)

Adjusted? _____

Checked by: _____

Special Handling (if applicable)

16. Was client notified of all discrepancies with this order?

Yes ☐

No ☐

NA ☒

Person Notified:

Date

By Whom:

Via:

☐ eMail

☐ Phone

☐ Fax

☐ In Person

Regarding:

Client Instructions:

17. Additional remarks:

18. Cooler Information

Cooler No	Temp $^{\circ}\text{C}$	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	3.3	Good	Yes			

Chain-of-Custody Record			
Client: Western Refining			
Mailing Address: #50 CR 4990 Bloomfield NM 87413 Phone #: 505-632-4135 email or Fax#:			
QA/QC Package: ☐ Standard ☒ Level 4 (Full Validation)			
Accreditation ☐ NELAP ☐ Other _____			
☐ EDD (Type) _____			
Date	Time	Matrix	Sample Request ID
4-30-15		H ₂ O	~~#30~~
/ 12:15		\	MW-52
/ 12:15		\	MW-52 Dup
			Trip Blank
Date:	Time:	Relinquished by:	Received by:
4-30-15	1621	(Signature)	(Signature)
Date:	Time:	Relinquished by:	Received by:
4/30/15	1841	(Signature)	(Signature)

Turn-Around Time:		☒ Standard ☐ Rush		Project Name:	
				Refinery Wells	
				Project #:	
				Pot# 12610956	
				Project Manager:	
				Sampler: Bob NAF	
				On Ice: ☒ Yes ☐ No	
				Sample Temperature: 3.3	
				Container Type and #	
				Preservative Type	
				HEAL No.	
				1504863	

Turn-Around Time:					
☒ Standard ☐ Rush					
Project Name: <u>Rifivory Wells</u>					
Project #: <u>P07# 12610956</u>					
Project Manager:					
Sampler: Bob NATHAN					
On Ice: ☒ Yes ☐ No					
Sample Temperature: 3.3					
Container Type and #	Preservative Type	HEAL No.	Date	Time	
~~3-VoA HCl~~		1504863			
3-VoA HCl	HCL	-001			
3-VoA HCl	HCL	-002			
		-003			
			Date	Time	
Received by: [Signature]			4/20/15	1621	
Received by: [Signature]			Date	Time	
			4/21/15	0730	

[illegible][illegible]

Remarks:

Date:	Time:	Relinquished by:	Received by:	Date	Time
4-20-15	1621	<i>[Signature]</i>	<i>[Signature]</i>	4/20/15	1621
4/20/15	1841	<i>[Signature]</i>	<i>[Signature]</i>	4/21/15	0730



Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

May 05, 2015

Kelly Robinson

Western Refining Southwest, Inc.

#50 CR 4990

Bloomfield, NM 87413

TEL: (505) 632-4166

FAX (505) 632-3911

RE: Collection Wells 4-21-15

OrderNo.: 1504930

Dear Kelly Robinson:

Hall Environmental Analysis Laboratory received 4 sample(s) on 4/22/2015 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to www.hallenvironmental.com or the state specific web sites. In order to properly interpret your results it is imperative that you review this report in its entirety. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. When necessary, data qualifiers are provided on both the sample analysis report and the QC summary report, both sections should be reviewed. All samples are reported, as received, unless otherwise indicated. Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH and residual chlorine are qualified as being analyzed outside of the recommended holding time.

Please don't hesitate to contact HEAL for any additional information or clarifications.

ADHS Cert #AZ0682 -- NMED-DWB Cert #NM9425 -- NMED-Micro Cert #NM0190

Sincerely,

A handwritten signature in black ink, appearing to read 'Andy Freeman', with a stylized flourish at the end.

Andy Freeman

Laboratory Manager

4901 Hawkins NE

Albuquerque, NM 87109

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1504930

Date Reported: 5/5/2015

CLIENT: Western Refining Southwest, Inc.

Client Sample ID: CW-0+60

Project: Collection Wells 4-21-15

Collection Date: 4/21/2015 11:15:00 AM

Lab ID: 1504930-001

Matrix: AQUEOUS

Received Date: 4/22/2015 8:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015D: DIESEL RANGE							Analyst: KJH
Diesel Range Organics (DRO)	1.4	0.20		mg/L	1	4/23/2015 6:49:09 PM	18804
Motor Oil Range Organics (MRO)	ND	2.5		mg/L	1	4/23/2015 6:49:09 PM	18804
Surr: DNOP	128	69.6-155		%REC	1	4/23/2015 6:49:09 PM	18804
EPA METHOD 8260: VOLATILES SHORT LIST							Analyst: cadg
Benzene	1.6	1.0		µg/L	1	4/24/2015 2:00:29 PM	R25753
Toluene	ND	1.0		µg/L	1	4/24/2015 2:00:29 PM	R25753
Ethylbenzene	1.7	1.0		µg/L	1	4/24/2015 2:00:29 PM	R25753
Methyl tert-butyl ether (MTBE)	ND	1.0		µg/L	1	4/24/2015 2:00:29 PM	R25753
Xylenes, Total	ND	1.5		µg/L	1	4/24/2015 2:00:29 PM	R25753
Surr: 1,2-Dichloroethane-d4	97.6	70-130		%REC	1	4/24/2015 2:00:29 PM	R25753
Surr: 4-Bromofluorobenzene	108	70-130		%REC	1	4/24/2015 2:00:29 PM	R25753
Surr: Dibromofluoromethane	102	70-130		%REC	1	4/24/2015 2:00:29 PM	R25753
Surr: Toluene-d8	108	70-130		%REC	1	4/24/2015 2:00:29 PM	R25753

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
	J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
	O	RSD is greater than RSDlimit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	Spike Recovery outside accepted recovery limits		

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1504930

Date Reported: 5/5/2015

CLIENT: Western Refining Southwest, Inc.

Client Sample ID: CW-25+95

Project: Collection Wells 4-21-15

Collection Date: 4/21/2015 8:45:00 AM

Lab ID: 1504930-002

Matrix: AQUEOUS

Received Date: 4/22/2015 8:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015D: DIESEL RANGE							Analyst: KJH
Diesel Range Organics (DRO)	ND	0.20		mg/L	1	4/23/2015 7:15:57 PM	18804
Motor Oil Range Organics (MRO)	ND	2.5		mg/L	1	4/23/2015 7:15:57 PM	18804
Surr: DNOP	125	69.6-155		%REC	1	4/23/2015 7:15:57 PM	18804
EPA METHOD 8260: VOLATILES SHORT LIST							Analyst: cadg
Benzene	210	5.0		µg/L	5	4/27/2015 9:00:30 PM	R25803
Toluene	ND	5.0		µg/L	5	4/27/2015 9:00:30 PM	R25803
Ethylbenzene	ND	5.0		µg/L	5	4/27/2015 9:00:30 PM	R25803
Methyl tert-butyl ether (MTBE)	ND	5.0		µg/L	5	4/27/2015 9:00:30 PM	R25803
Xylenes, Total	ND	7.5		µg/L	5	4/27/2015 9:00:30 PM	R25803
Surr: 1,2-Dichloroethane-d4	104	70-130		%REC	5	4/27/2015 9:00:30 PM	R25803
Surr: 4-Bromofluorobenzene	99.0	70-130		%REC	5	4/27/2015 9:00:30 PM	R25803
Surr: Dibromofluoromethane	102	70-130		%REC	5	4/27/2015 9:00:30 PM	R25803
Surr: Toluene-d8	103	70-130		%REC	5	4/27/2015 9:00:30 PM	R25803

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
	J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
	O	RSD is greater than RSDlimit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	Spike Recovery outside accepted recovery limits		

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1504930

Date Reported: 5/5/2015

CLIENT: Western Refining Southwest, Inc.

Client Sample ID: CW-25+95 Dup

Project: Collection Wells 4-21-15

Collection Date: 4/21/2015 8:45:00 AM

Lab ID: 1504930-003

Matrix: AQUEOUS

Received Date: 4/22/2015 8:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015D: DIESEL RANGE							Analyst: KJH
Diesel Range Organics (DRO)	ND	0.20		mg/L	1	4/23/2015 7:43:06 PM	18804
Motor Oil Range Organics (MRO)	ND	2.5		mg/L	1	4/23/2015 7:43:06 PM	18804
Surr: DNOP	119	69.6-155		%REC	1	4/23/2015 7:43:06 PM	18804
EPA METHOD 8260: VOLATILES SHORT LIST							Analyst: cadg
Benzene	210	5.0		µg/L	5	4/28/2015 12:22:04 AM	R25803
Toluene	ND	5.0		µg/L	5	4/28/2015 12:22:04 AM	R25803
Ethylbenzene	ND	5.0		µg/L	5	4/28/2015 12:22:04 AM	R25803
Methyl tert-butyl ether (MTBE)	ND	5.0		µg/L	5	4/28/2015 12:22:04 AM	R25803
Xylenes, Total	ND	7.5		µg/L	5	4/28/2015 12:22:04 AM	R25803
Surr: 1,2-Dichloroethane-d4	101	70-130		%REC	5	4/28/2015 12:22:04 AM	R25803
Surr: 4-Bromofluorobenzene	102	70-130		%REC	5	4/28/2015 12:22:04 AM	R25803
Surr: Dibromofluoromethane	106	70-130		%REC	5	4/28/2015 12:22:04 AM	R25803
Surr: Toluene-d8	99.0	70-130		%REC	5	4/28/2015 12:22:04 AM	R25803

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
	J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
	O	RSD is greater than RSDlimit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	Spike Recovery outside accepted recovery limits		

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1504930

Date Reported: 5/5/2015

CLIENT: Western Refining Southwest, Inc.

Client Sample ID: Trip Blank

Project: Collection Wells 4-21-15

Collection Date:

Lab ID: 1504930-004

Matrix: TRIP BLANK

Received Date: 4/22/2015 8:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260: VOLATILES SHORT LIST						Analyst: cadg	
Benzene	ND	1.0		µg/L	1	4/24/2015 4:24:48 PM	R25753
Toluene	ND	1.0		µg/L	1	4/24/2015 4:24:48 PM	R25753
Ethylbenzene	ND	1.0		µg/L	1	4/24/2015 4:24:48 PM	R25753
Methyl tert-butyl ether (MTBE)	ND	1.0		µg/L	1	4/24/2015 4:24:48 PM	R25753
Xylenes, Total	ND	1.5		µg/L	1	4/24/2015 4:24:48 PM	R25753
Surr: 1,2-Dichloroethane-d4	96.4	70-130		%REC	1	4/24/2015 4:24:48 PM	R25753
Surr: 4-Bromofluorobenzene	100	70-130		%REC	1	4/24/2015 4:24:48 PM	R25753
Surr: Dibromofluoromethane	103	70-130		%REC	1	4/24/2015 4:24:48 PM	R25753
Surr: Toluene-d8	103	70-130		%REC	1	4/24/2015 4:24:48 PM	R25753

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank	Page 4 of 7
	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded	
	J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit	
	O	RSD is greater than RSDlimit	P	Sample pH Not In Range	
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit	
	S	Spike Recovery outside accepted recovery limits			

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1504930

05-May-15

Client: Western Refining Southwest, Inc.

Project: Collection Wells 4-21-15

Sample ID	MB-18804		SampType: MBLK		TestCode: EPA Method 8015D: Diesel Range					
Client ID:	PBW		Batch ID: 18804		RunNo: 25693					
Prep Date:	4/21/2015		Analysis Date: 4/23/2015		SeqNo: 762153		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	0.20								
Motor Oil Range Organics (MRO)	ND	2.5								
Surr: DNOP	0.54		0.5000		108	69.6	155			

Sample ID	LCS-18804		SampType: LCS		TestCode: EPA Method 8015D: Diesel Range					
Client ID:	LCSW		Batch ID: 18804		RunNo: 25693					
Prep Date:	4/21/2015		Analysis Date: 4/23/2015		SeqNo: 762154		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	3.1	0.20	2.500	0	123	65.8	162			
Surr: DNOP	0.30		0.2500		119	69.6	155			

Qualifiers:

* Value exceeds Maximum Contaminant Level.
E Value above quantitation range
J Analyte detected below quantitation limits
O RSD is greater than RSDlimit
R RPD outside accepted recovery limits
S Spike Recovery outside accepted recovery limits

B Analyte detected in the associated Method Blank
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
P Sample pH Not In Range
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1504930

05-May-15

Client: Western Refining Southwest, Inc.

Project: Collection Wells 4-21-15

Sample ID 5mL rb	SampType: MBLK		TestCode: EPA Method 8260: Volatiles Short List							
Client ID: PBW	Batch ID: R25753		RunNo: 25753							
Prep Date:	Analysis Date: 4/24/2015		SeqNo: 763372		Units: µg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	1.0								
Toluene	ND	1.0								
Ethylbenzene	ND	1.0								
Methyl tert-butyl ether (MTBE)	ND	1.0								
Xylenes, Total	ND	1.5								
Surr: 1,2-Dichloroethane-d4	10		10.00		103	70	130			
Surr: 4-Bromofluorobenzene	11		10.00		107	70	130			
Surr: Dibromofluoromethane	11		10.00		106	70	130			
Surr: Toluene-d8	11		10.00		106	70	130			

Sample ID 100ng lcs	SampType: LCS		TestCode: EPA Method 8260: Volatiles Short List							
Client ID: LCSW	Batch ID: R25753		RunNo: 25753							
Prep Date:	Analysis Date: 4/24/2015		SeqNo: 763373		Units: µg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	21	1.0	20.00	0	104	70	130			
Toluene	19	1.0	20.00	0	96.5	70	130			
Surr: 1,2-Dichloroethane-d4	9.8		10.00		97.8	70	130			
Surr: 4-Bromofluorobenzene	11		10.00		109	70	130			
Surr: Dibromofluoromethane	10		10.00		101	70	130			
Surr: Toluene-d8	10		10.00		101	70	130			

Sample ID 1504930-001a ms	SampType: MS		TestCode: EPA Method 8260: Volatiles Short List							
Client ID: CW-0+60	Batch ID: R25753		RunNo: 25753							
Prep Date:	Analysis Date: 4/24/2015		SeqNo: 763379		Units: µg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	22	1.0	20.00	1.637	99.7	70	130			
Toluene	20	1.0	20.00	0	101	70	130			
Surr: 1,2-Dichloroethane-d4	9.5		10.00		94.7	70	130			
Surr: 4-Bromofluorobenzene	10		10.00		104	70	130			
Surr: Dibromofluoromethane	9.7		10.00		96.7	70	130			
Surr: Toluene-d8	11		10.00		106	70	130			

Sample ID 1504930-001a msd	SampType: MSD		TestCode: EPA Method 8260: Volatiles Short List							
Client ID: CW-0+60	Batch ID: R25753		RunNo: 25753							
Prep Date:	Analysis Date: 4/24/2015		SeqNo: 763380		Units: µg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	21	1.0	20.00	1.637	97.5	70	130	2.09	20	

Qualifiers:

* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank
E Value above quantitation range	H Holding times for preparation or analysis exceeded
J Analyte detected below quantitation limits	ND Not Detected at the Reporting Limit
O RSD is greater than RSDlimit	P Sample pH Not In Range
R RPD outside accepted recovery limits	RL Reporting Detection Limit
S Spike Recovery outside accepted recovery limits	

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1504930

05-May-15

Client: Western Refining Southwest, Inc.

Project: Collection Wells 4-21-15

Sample ID	1504930-001a msd			SampType:	MSD		TestCode:	EPA Method 8260: Volatiles Short List			
Client ID:	CW-0+60			Batch ID:	R25753		RunNo:	25753			
Prep Date:				Analysis Date:	4/24/2015		SeqNo:	763380		Units:	µg/L
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Toluene	20	1.0	20.00	0	98.8	70	130	2.17	20		
Surr: 1,2-Dichloroethane-d4	10		10.00		103	70	130	0	0		
Surr: 4-Bromofluorobenzene	10		10.00		101	70	130	0	0		
Surr: Dibromofluoromethane	11		10.00		107	70	130	0	0		
Surr: Toluene-d8	10		10.00		101	70	130	0	0		

Sample ID	100ng lcs		SampType: LCS		TestCode: EPA Method 8260: Volatiles Short List					
Client ID:	LCSW		Batch ID: R25803		RunNo: 25803					
Prep Date:			Analysis Date: 4/27/2015		SeqNo: 764516		Units: µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	19	1.0	20.00	0	95.9	70	130			
Toluene	18	1.0	20.00	0	89.3	70	130			
Surr: 1,2-Dichloroethane-d4	9.9		10.00		98.8	70	130			
Surr: 4-Bromofluorobenzene	10		10.00		104	70	130			
Surr: Dibromofluoromethane	10		10.00		103	70	130			
Surr: Toluene-d8	9.9		10.00		99.0	70	130			

Sample ID	5mL rb	SampType: MBLK		TestCode: EPA Method 8260: Volatiles Short List						
Client ID:	PBW	Batch ID: R25803		RunNo: 25803						
Prep Date:		Analysis Date: 4/27/2015		SeqNo: 764519		Units: µg/L				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	1.0								
Toluene	ND	1.0								
Ethylbenzene	ND	1.0								
Methyl tert-butyl ether (MTBE)	ND	1.0								
Xylenes, Total	ND	1.5								
Surr: 1,2-Dichloroethane-d4	10		10.00		101	70	130			
Surr: 4-Bromofluorobenzene	10		10.00		105	70	130			
Surr: Dibromofluoromethane	10		10.00		103	70	130			
Surr: Toluene-d8	11		10.00		108	70	130			

Qualifiers:

* Value exceeds Maximum Contaminant Level.
E Value above quantitation range
J Analyte detected below quantitation limits
O RSD is greater than RSDlimit
R RPD outside accepted recovery limits
S Spike Recovery outside accepted recovery limits

B Analyte detected in the associated Method Blank
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
P Sample pH Not In Range
RL Reporting Detection Limit

Sample Log-In Check List

Client Name: Western Refining Southw

Work Order Number: 1504930

RcptNo: 1

Received by/date:

AT 04/22/15

Logged By: Lindsay Mangin

4/22/2015 8:00:00 AM

Completed By: Lindsay Mangin

4/22/2015 8:08:45 AM

Reviewed By:

JR 04/22/15

Chain of Custody

1. Custody seals intact on sample bottles?

Yes ☐

No ☐

Not Present ☒

2. Is Chain of Custody complete?

Yes ☒

No ☐

Not Present ☐

3. How was the sample delivered?

Courier

Log In

4. Was an attempt made to cool the samples?

Yes ☒

No ☐

NA ☐

5. Were all samples received at a temperature of $>0^{\circ}\text{C}$ to 6.0°C ?

Yes ☒

No ☐

NA ☐

6. Sample(s) in proper container(s)?

Yes ☒

No ☐

7. Sufficient sample volume for indicated test(s)?

Yes ☒

No ☐

8. Are samples (except VOA and ONG) properly preserved?

Yes ☒

No ☐

9. Was preservative added to bottles?

Yes ☐

No ☒

NA ☐

10. VOA vials have zero headspace?

Yes ☒

No ☐

No VOA Vials ☐

11. Were any sample containers received broken?

Yes ☐

No ☒

12. Does paperwork match bottle labels?

(Note discrepancies on chain of custody)

Yes ☒

No ☐

13. Are matrices correctly identified on Chain of Custody?

Yes ☒

No ☐

14. Is it clear what analyses were requested?

Yes ☒

No ☐

15. Were all holding times able to be met?

(If no, notify customer for authorization.)

Yes ☒

No ☐

of preserved
bottles checked
for pH:

(<2 or >12 unless noted)

Adjusted?

Checked by:

Special Handling (if applicable)

16. Was client notified of all discrepancies with this order?

Yes ☐

No ☐

NA ☒

Person Notified:

Date

By Whom:

Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding:

Client Instructions:

17. Additional remarks:

18. Cooler Information

Cooler No	Temp $^{\circ}\text{C}$	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	1.0	Good	Yes			



Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

May 05, 2015

Kelly Robinson

Western Refining Southwest, Inc.

#50 CR 4990

Bloomfield, NM 87413

TEL: (505) 632-4166

FAX (505) 632-3911

RE: North Boundary Barrier 4-21-15

OrderNo.: 1504933

Dear Kelly Robinson:

Hall Environmental Analysis Laboratory received 3 sample(s) on 4/22/2015 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to www.hallenvironmental.com or the state specific web sites. In order to properly interpret your results it is imperative that you review this report in its entirety. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. When necessary, data qualifiers are provided on both the sample analysis report and the QC summary report, both sections should be reviewed. All samples are reported, as received, unless otherwise indicated. Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH and residual chlorine are qualified as being analyzed outside of the recommended holding time.

Please don't hesitate to contact HEAL for any additional information or clarifications.

ADHS Cert #AZ0682 -- NMED-DWB Cert #NM9425 -- NMED-Micro Cert #NM0190

Sincerely,

A handwritten signature in black ink, appearing to read 'Andy Freeman', with a stylized flourish at the end.

Andy Freeman

Laboratory Manager

4901 Hawkins NE

Albuquerque, NM 87109

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1504933

Date Reported: 5/5/2015

CLIENT: Western Refining Southwest, Inc.

Client Sample ID: OW-16+60

Project: North Boundary Barrier 4-21-15

Collection Date: 4/21/2015 10:00:00 AM

Lab ID: 1504933-001

Matrix: AQUEOUS

Received Date: 4/22/2015 8:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015D: DIESEL RANGE							Analyst: KJH
Diesel Range Organics (DRO)	12	0.20		mg/L	1	4/23/2015 8:37:12 PM	18804
Motor Oil Range Organics (MRO)	ND	2.5		mg/L	1	4/23/2015 8:37:12 PM	18804
Surr: DNOP	118	69.6-155		%REC	1	4/23/2015 8:37:12 PM	18804
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	1.8	0.50		mg/L	10	4/23/2015 3:25:44 PM	R25707
Surr: BFB	153	80-120	S	%REC	10	4/23/2015 3:25:44 PM	R25707
EPA METHOD 8260: VOLATILES SHORT LIST							Analyst: DJF
Benzene	ND	5.0		µg/L	10	4/29/2015 3:35:58 PM	R25861
Toluene	ND	10		µg/L	10	4/29/2015 3:35:58 PM	R25861
Ethylbenzene	ND	10		µg/L	10	4/29/2015 3:35:58 PM	R25861
Methyl tert-butyl ether (MTBE)	460	10		µg/L	10	4/29/2015 3:35:58 PM	R25861
Xylenes, Total	ND	15		µg/L	10	4/29/2015 3:35:58 PM	R25861
Surr: 1,2-Dichloroethane-d4	102	70-130		%REC	10	4/29/2015 3:35:58 PM	R25861
Surr: 4-Bromofluorobenzene	99.2	70-130		%REC	10	4/29/2015 3:35:58 PM	R25861
Surr: Dibromofluoromethane	100	70-130		%REC	10	4/29/2015 3:35:58 PM	R25861
Surr: Toluene-d8	102	70-130		%REC	10	4/29/2015 3:35:58 PM	R25861

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank	Page 1 of 8
	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded	
	J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit	
	O	RSD is greater than RSDlimit	P	Sample pH Not In Range	
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit	
	S	Spike Recovery outside accepted recovery limits			

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1504933

Date Reported: 5/5/2015

CLIENT: Western Refining Southwest, Inc.

Client Sample ID: OW-11+15

Project: North Boundary Barrier 4-21-15

Collection Date: 4/21/2015 10:15:00 AM

Lab ID: 1504933-002

Matrix: AQUEOUS

Received Date: 4/22/2015 8:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015D: DIESEL RANGE							Analyst: JME
Diesel Range Organics (DRO)	94	2.0		mg/L	10	4/24/2015 10:34:16 AM	18804
Motor Oil Range Organics (MRO)	ND	25		mg/L	10	4/24/2015 10:34:16 AM	18804
Surr: DNOP	0	69.6-155	S	%REC	10	4/24/2015 10:34:16 AM	18804
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	5.8	0.050		mg/L	1	4/24/2015 11:08:39 AM	R25755
Surr: BFB	273	80-120	S	%REC	1	4/24/2015 11:08:39 AM	R25755
EPA METHOD 8260: VOLATILES SHORT LIST							Analyst: DJF
Benzene	1700	25		µg/L	50	4/29/2015 4:58:36 PM	R25861
Toluene	ND	50		µg/L	50	4/29/2015 4:58:36 PM	R25861
Ethylbenzene	ND	50		µg/L	50	4/29/2015 4:58:36 PM	R25861
Methyl tert-butyl ether (MTBE)	640	50		µg/L	50	4/29/2015 4:58:36 PM	R25861
Xylenes, Total	ND	75		µg/L	50	4/29/2015 4:58:36 PM	R25861
Surr: 1,2-Dichloroethane-d4	114	70-130		%REC	50	4/29/2015 4:58:36 PM	R25861
Surr: 4-Bromofluorobenzene	92.8	70-130		%REC	50	4/29/2015 4:58:36 PM	R25861
Surr: Dibromofluoromethane	97.4	70-130		%REC	50	4/29/2015 4:58:36 PM	R25861
Surr: Toluene-d8	98.2	70-130		%REC	50	4/29/2015 4:58:36 PM	R25861

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.
	E	Value above quantitation range
	J	Analyte detected below quantitation limits
	O	RSD is greater than RSDlimit
	R	RPD outside accepted recovery limits
	S	Spike Recovery outside accepted recovery limits

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
P	Sample pH Not In Range
RL	Reporting Detection Limit

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1504933

Date Reported: 5/5/2015

CLIENT: Western Refining Southwest, Inc.

Client Sample ID: OW-0+60

Project: North Boundary Barrier 4-21-15

Collection Date: 4/21/2015 11:00:00 AM

Lab ID: 1504933-003

Matrix: AQUEOUS

Received Date: 4/22/2015 8:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015D: DIESEL RANGE							Analyst: JME
Diesel Range Organics (DRO)	3.2	0.20		mg/L	1	4/24/2015 11:21:14 AM	18804
Motor Oil Range Organics (MRO)	ND	2.5		mg/L	1	4/24/2015 11:21:14 AM	18804
Surr: DNOP	121	69.6-155		%REC	1	4/24/2015 11:21:14 AM	18804
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	0.30	0.050		mg/L	1	4/24/2015 1:05:50 PM	R25755
Surr: BFB	137	80-120	S	%REC	1	4/24/2015 1:05:50 PM	R25755
EPA METHOD 8260: VOLATILES SHORT LIST							Analyst: DJF
Benzene	ND	1.0		µg/L	1	4/29/2015 3:08:24 PM	R25861
Toluene	ND	1.0		µg/L	1	4/29/2015 3:08:24 PM	R25861
Ethylbenzene	ND	1.0		µg/L	1	4/29/2015 3:08:24 PM	R25861
Methyl tert-butyl ether (MTBE)	ND	1.0		µg/L	1	4/29/2015 3:08:24 PM	R25861
Xylenes, Total	ND	1.5		µg/L	1	4/29/2015 3:08:24 PM	R25861
Surr: 1,2-Dichloroethane-d4	108	70-130		%REC	1	4/29/2015 3:08:24 PM	R25861
Surr: 4-Bromofluorobenzene	75.7	70-130		%REC	1	4/29/2015 3:08:24 PM	R25861
Surr: Dibromofluoromethane	92.9	70-130		%REC	1	4/29/2015 3:08:24 PM	R25861
Surr: Toluene-d8	97.6	70-130		%REC	1	4/29/2015 3:08:24 PM	R25861

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.
	E	Value above quantitation range
	J	Analyte detected below quantitation limits
	O	RSD is greater than RSDlimit
	R	RPD outside accepted recovery limits
	S	Spike Recovery outside accepted recovery limits

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
P	Sample pH Not In Range
RL	Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1504933

05-May-15

Client: Western Refining Southwest, Inc.

Project: North Boundary Barrier 4-21-15

Sample ID	MB-18804		SampType:	MBLK		TestCode:	EPA Method 8015D: Diesel Range				
Client ID:	PBW		Batch ID:	18804		RunNo:	25693				
Prep Date:	4/21/2015		Analysis Date:	4/23/2015		SeqNo:	762153		Units: mg/L		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Diesel Range Organics (DRO)	ND	0.20									
Motor Oil Range Organics (MRO)	ND	2.5									
Surr: DNOP	0.54		0.5000		108	69.6	155				

Sample ID	LCS-18804		SampType: LCS		TestCode: EPA Method 8015D: Diesel Range					
Client ID:	LCSW		Batch ID: 18804		RunNo: 25693					
Prep Date:	4/21/2015		Analysis Date: 4/23/2015		SeqNo: 762154		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	3.1	0.20	2.500	0	123	65.8	162			
Surr: DNOP	0.30		0.2500		119	69.6	155			

Qualifiers:

* Value exceeds Maximum Contaminant Level.
E Value above quantitation range
J Analyte detected below quantitation limits
O RSD is greater than RSDlimit
R RPD outside accepted recovery limits
S Spike Recovery outside accepted recovery limits

B Analyte detected in the associated Method Blank
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
P Sample pH Not In Range
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1504933

05-May-15

Client: Western Refining Southwest, Inc.

Project: North Boundary Barrier 4-21-15

Sample ID 5ML RBB	SampType: MBLK		TestCode: EPA Method 8015D: Gasoline Range							
Client ID: PBW	Batch ID: R25707		RunNo: 25707							
Prep Date:	Analysis Date: 4/23/2015		SeqNo: 762025		Units: mg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	0.050								
Surr: BFB	17		20.00		83.6	80	120			

Sample ID 2.5UG GRO LCSB	SampType: LCS		TestCode: EPA Method 8015D: Gasoline Range							
Client ID: LCSW	Batch ID: R25707		RunNo: 25707							
Prep Date:	Analysis Date: 4/23/2015		SeqNo: 762026		Units: mg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	0.49	0.050	0.5000	0	98.2	80	120			
Surr: BFB	18		20.00		88.7	80	120			

Sample ID 1504933-001BMS	SampType: MS		TestCode: EPA Method 8015D: Gasoline Range							
Client ID: OW-16+60	Batch ID: R25707		RunNo: 25707							
Prep Date:	Analysis Date: 4/23/2015		SeqNo: 762028		Units: mg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	5.0	0.50	5.000	1.770	64.5	51	131			
Surr: BFB	290		200.0		143	80	120			S

Sample ID 1504933-001BMSD	SampType: MSD		TestCode: EPA Method 8015D: Gasoline Range							
Client ID: OW-16+60	Batch ID: R25707		RunNo: 25707							
Prep Date:	Analysis Date: 4/23/2015		SeqNo: 762029		Units: mg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	5.1	0.50	5.000	1.770	66.4	51	131	1.94	20	
Surr: BFB	290		200.0		147	80	120	0	0	S

Sample ID 5ML RB	SampType: MBLK		TestCode: EPA Method 8015D: Gasoline Range							
Client ID: PBW	Batch ID: R25755		RunNo: 25755							
Prep Date:	Analysis Date: 4/24/2015		SeqNo: 763440		Units: mg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	0.050								
Surr: BFB	17		20.00		85.4	80	120			

Sample ID 2.5UG GRO LCS	SampType: LCS		TestCode: EPA Method 8015D: Gasoline Range							
Client ID: LCSW	Batch ID: R25755		RunNo: 25755							
Prep Date:	Analysis Date: 4/24/2015		SeqNo: 763441		Units: mg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- O RSD is greater than RSDlimit
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- P Sample pH Not In Range
- RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1504933

05-May-15

Client: Western Refining Southwest, Inc.**Project:** North Boundary Barrier 4-21-15

Sample ID	2.5UG GRO LCS	SampType:	LCS	TestCode:	EPA Method 8015D: Gasoline Range					
Client ID:	LCSW	Batch ID:	R25755	RunNo:	25755					
Prep Date:		Analysis Date:	4/24/2015	SeqNo:	763441	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	0.52	0.050	0.5000	0	104	80	120			
Surr: BFB	19		20.00		96.3	80	120			

Qualifiers:

* Value exceeds Maximum Contaminant Level.
E Value above quantitation range
J Analyte detected below quantitation limits
O RSD is greater than RSDlimit
R RPD outside accepted recovery limits
S Spike Recovery outside accepted recovery limits

B Analyte detected in the associated Method Blank
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
P Sample pH Not In Range
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1504933

05-May-15

Client: Western Refining Southwest, Inc.

Project: North Boundary Barrier 4-21-15

Sample ID	5ml rb	SampType:	MBLK	TestCode:	EPA Method 8260: Volatiles Short List					
Client ID:	PBW	Batch ID:	R25861	RunNo:	25861					
Prep Date:		Analysis Date:	4/29/2015	SeqNo:	766388	Units:	µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	1.0								
Toluene	ND	1.0								
Ethylbenzene	ND	1.0								
Methyl tert-butyl ether (MTBE)	ND	1.0								
Xylenes, Total	ND	1.5								
Surr: 1,2-Dichloroethane-d4	10		10.00		103	70	130			
Surr: 4-Bromofluorobenzene	9.5		10.00		95.3	70	130			
Surr: Dibromofluoromethane	10		10.00		103	70	130			
Surr: Toluene-d8	9.7		10.00		97.4	70	130			

Sample ID	100nglcs200ngT2lc	SampType:	LCS	TestCode:	EPA Method 8260: Volatiles Short List					
Client ID:	LCSW	Batch ID:	R25861	RunNo:	25861					
Prep Date:		Analysis Date:	4/29/2015	SeqNo:	766393	Units:	µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	19	1.0	20.00	0	95.8	70	130			
Toluene	19	1.0	20.00	0	96.3	70	130			
Surr: 1,2-Dichloroethane-d4	9.3		10.00		92.7	70	130			
Surr: 4-Bromofluorobenzene	10		10.00		102	70	130			
Surr: Dibromofluoromethane	8.9		10.00		88.5	70	130			
Surr: Toluene-d8	9.7		10.00		97.3	70	130			

Sample ID	1504933-001a ms	SampType:	MS	TestCode:	EPA Method 8260: Volatiles Short List					
Client ID:	OW-16+60	Batch ID:	R25861	RunNo:	25861					
Prep Date:		Analysis Date:	4/29/2015	SeqNo:	766395	Units:	µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	210	5.0	200.0	0	107	70	130			
Toluene	200	10	200.0	0	99.1	70	130			
Surr: 1,2-Dichloroethane-d4	100		100.0		101	70	130			
Surr: 4-Bromofluorobenzene	100		100.0		101	70	130			
Surr: Dibromofluoromethane	97		100.0		97.3	70	130			
Surr: Toluene-d8	97		100.0		97.1	70	130			

Sample ID	1504933-001a msd	SampType:	MSD	TestCode:	EPA Method 8260: Volatiles Short List					
Client ID:	OW-16+60	Batch ID:	R25861	RunNo:	25861					
Prep Date:		Analysis Date:	4/29/2015	SeqNo:	766396	Units:	µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	200	5.0	200.0	0	102	70	130	4.73	20	

Qualifiers:

* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank
E Value above quantitation range	H Holding times for preparation or analysis exceeded
J Analyte detected below quantitation limits	ND Not Detected at the Reporting Limit
O RSD is greater than RSDlimit	P Sample pH Not In Range
R RPD outside accepted recovery limits	RL Reporting Detection Limit
S Spike Recovery outside accepted recovery limits	

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1504933

05-May-15

Client: Western Refining Southwest, Inc.

Project: North Boundary Barrier 4-21-15

Sample ID	1504933-001a msd	SampType:	MSD	TestCode:	EPA Method 8260: Volatiles Short List						
Client ID:	OW-16+60	Batch ID:	R25861	RunNo:	25861						
Prep Date:		Analysis Date:	4/29/2015	SeqNo:	766396	Units:	µg/L				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Toluene	200	10	200.0	0	97.6	70	130	1.47	20		
Surr: 1,2-Dichloroethane-d4	110		100.0		109	70	130	0	0		
Surr: 4-Bromofluorobenzene	99		100.0		99.1	70	130	0	0		
Surr: Dibromofluoromethane	100		100.0		103	70	130	0	0		
Surr: Toluene-d8	100		100.0		102	70	130	0	0		

Qualifiers:

* Value exceeds Maximum Contaminant Level.
E Value above quantitation range
J Analyte detected below quantitation limits
O RSD is greater than RSDlimit
R RPD outside accepted recovery limits
S Spike Recovery outside accepted recovery limits

B Analyte detected in the associated Method Blank
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
P Sample pH Not In Range
RL Reporting Detection Limit

Sample Log-In Check List

Client Name: Western Refining Southw

Work Order Number: 1504933

RcptNo: 1

Received by/date:

AT

04/22/15

Logged By:

Lindsay Mangin

4/22/2015 8:00:00 AM

Lindsay Mangin

Completed By:

Lindsay Mangin

4/22/2015 8:24:42 AM

Lindsay Mangin

Reviewed By:

JR

04/22/15

Chain of Custody

1. Custody seals intact on sample bottles? Yes ☐ No ☐ Not Present ☒
2. Is Chain of Custody complete? Yes ☒ No ☐ Not Present ☐
3. How was the sample delivered? Courier

Log In

4. Was an attempt made to cool the samples? Yes ☒ No ☐ NA ☐
5. Were all samples received at a temperature of $>0^{\circ}\text{C}$ to 6.0°C ? Yes ☒ No ☐ NA ☐
6. Sample(s) in proper container(s)? Yes ☒ No ☐
7. Sufficient sample volume for indicated test(s)? Yes ☒ No ☐
8. Are samples (except VOA and ONG) properly preserved? Yes ☒ No ☐
9. Was preservative added to bottles? Yes ☐ No ☒ NA ☐
10. VOA vials have zero headspace? Yes ☒ No ☐ No VOA Vials ☐
11. Were any sample containers received broken? Yes ☐ No ☒
12. Does paperwork match bottle labels?
(Note discrepancies on chain of custody) Yes ☒ No ☐
13. Are matrices correctly identified on Chain of Custody? Yes ☒ No ☐
14. Is it clear what analyses were requested? Yes ☒ No ☐
15. Were all holding times able to be met?
(If no, notify customer for authorization.) Yes ☒ No ☐

of preserved
bottles checked
for pH:

(<2 or >12 unless noted)

Adjusted? _____

Checked by: _____

Special Handling (if applicable)

16. Was client notified of all discrepancies with this order? Yes ☐ No ☐ NA ☒

Person Notified: _____

Date: _____

By Whom: _____

Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding: _____

Client Instructions: _____

17. Additional remarks:

18. Cooler Information

Cooler No	Temp $^{\circ}\text{C}$	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	1.0	Good	Yes			



Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

May 05, 2015

Kelly Robinson

Western Refining Southwest, Inc.

#50 CR 4990

Bloomfield, NM 87413

TEL: (505) 632-4166

FAX (505) 632-3911

RE: North Boundary Barrier 4-21-15

OrderNo.: 1504934

Dear Kelly Robinson:

Hall Environmental Analysis Laboratory received 5 sample(s) on 4/22/2015 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to www.hallenvironmental.com or the state specific web sites. In order to properly interpret your results it is imperative that you review this report in its entirety. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. When necessary, data qualifiers are provided on both the sample analysis report and the QC summary report, both sections should be reviewed. All samples are reported, as received, unless otherwise indicated. Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH and residual chlorine are qualified as being analyzed outside of the recommended holding time.

Please don't hesitate to contact HEAL for any additional information or clarifications.

ADHS Cert #AZ0682 -- NMED-DWB Cert #NM9425 -- NMED-Micro Cert #NM0190

Sincerely,

A handwritten signature in black ink, appearing to read "Andy Freeman", with a stylized flourish at the end.

Andy Freeman

Laboratory Manager

4901 Hawkins NE

Albuquerque, NM 87109

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1504934

Date Reported: 5/5/2015

CLIENT: Western Refining Southwest, Inc.

Client Sample ID: OW-25+70

Project: North Boundary Barrier 4-21-15

Collection Date: 4/21/2015 9:00:00 AM

Lab ID: 1504934-001

Matrix: AQUEOUS

Received Date: 4/22/2015 8:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015D: DIESEL RANGE							Analyst: KJH
Diesel Range Organics (DRO)	ND	0.20		mg/L	1	4/23/2015 9:58:03 PM	18804
Motor Oil Range Organics (MRO)	ND	2.5		mg/L	1	4/23/2015 9:58:03 PM	18804
Surr: DNOP	123	69.6-155		%REC	1	4/23/2015 9:58:03 PM	18804
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	0.12	0.050		mg/L	1	4/24/2015 12:42:28 AM	R25707
Surr: BFB	81.8	80-120		%REC	1	4/24/2015 12:42:28 AM	R25707
EPA METHOD 8260: VOLATILES SHORT LIST							Analyst: cadg
Benzene	ND	1.0		µg/L	1	4/24/2015 6:19:54 PM	R25753
Toluene	ND	1.0		µg/L	1	4/24/2015 6:19:54 PM	R25753
Ethylbenzene	ND	1.0		µg/L	1	4/24/2015 6:19:54 PM	R25753
Methyl tert-butyl ether (MTBE)	ND	1.0		µg/L	1	4/24/2015 6:19:54 PM	R25753
Xylenes, Total	ND	1.5		µg/L	1	4/24/2015 6:19:54 PM	R25753
Surr: 1,2-Dichloroethane-d4	99.5	70-130		%REC	1	4/24/2015 6:19:54 PM	R25753
Surr: 4-Bromofluorobenzene	103	70-130		%REC	1	4/24/2015 6:19:54 PM	R25753
Surr: Dibromofluoromethane	104	70-130		%REC	1	4/24/2015 6:19:54 PM	R25753
Surr: Toluene-d8	104	70-130		%REC	1	4/24/2015 6:19:54 PM	R25753

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.
	E	Value above quantitation range
	J	Analyte detected below quantitation limits
	O	RSD is greater than RSDlimit
	R	RPD outside accepted recovery limits
	S	Spike Recovery outside accepted recovery limits

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
P	Sample pH Not In Range
RL	Reporting Detection Limit

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1504934

Date Reported: 5/5/2015

CLIENT: Western Refining Southwest, Inc.

Client Sample ID: OW-23+90

Project: North Boundary Barrier 4-21-15

Collection Date: 4/21/2015 9:15:00 AM

Lab ID: 1504934-002

Matrix: AQUEOUS

Received Date: 4/22/2015 8:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015D: DIESEL RANGE							Analyst: KJH
Diesel Range Organics (DRO)	ND	0.20		mg/L	1	4/23/2015 10:25:06 PM	18804
Motor Oil Range Organics (MRO)	ND	2.5		mg/L	1	4/23/2015 10:25:06 PM	18804
Surr: DNOP	120	69.6-155		%REC	1	4/23/2015 10:25:06 PM	18804
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	ND	0.050		mg/L	1	4/24/2015 1:11:49 AM	R25707
Surr: BFB	81.6	80-120		%REC	1	4/24/2015 1:11:49 AM	R25707
EPA METHOD 8260: VOLATILES SHORT LIST							Analyst: cadg
Benzene	ND	1.0		µg/L	1	4/24/2015 6:48:44 PM	R25753
Toluene	ND	1.0		µg/L	1	4/24/2015 6:48:44 PM	R25753
Ethylbenzene	ND	1.0		µg/L	1	4/24/2015 6:48:44 PM	R25753
Methyl tert-butyl ether (MTBE)	ND	1.0		µg/L	1	4/24/2015 6:48:44 PM	R25753
Xylenes, Total	ND	1.5		µg/L	1	4/24/2015 6:48:44 PM	R25753
Surr: 1,2-Dichloroethane-d4	103	70-130		%REC	1	4/24/2015 6:48:44 PM	R25753
Surr: 4-Bromofluorobenzene	105	70-130		%REC	1	4/24/2015 6:48:44 PM	R25753
Surr: Dibromofluoromethane	107	70-130		%REC	1	4/24/2015 6:48:44 PM	R25753
Surr: Toluene-d8	107	70-130		%REC	1	4/24/2015 6:48:44 PM	R25753

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.
	E	Value above quantitation range
	J	Analyte detected below quantitation limits
	O	RSD is greater than RSDlimit
	R	RPD outside accepted recovery limits
	S	Spike Recovery outside accepted recovery limits

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
P	Sample pH Not In Range
RL	Reporting Detection Limit

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1504934

Date Reported: 5/5/2015

CLIENT: Western Refining Southwest, Inc.

Client Sample ID: OW-23+10

Project: North Boundary Barrier 4-21-15

Collection Date: 4/21/2015 9:30:00 AM

Lab ID: 1504934-003

Matrix: AQUEOUS

Received Date: 4/22/2015 8:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015D: DIESEL RANGE							Analyst: KJH
Diesel Range Organics (DRO)	ND	0.20		mg/L	1	4/23/2015 10:52:04 PM	18804
Motor Oil Range Organics (MRO)	ND	2.5		mg/L	1	4/23/2015 10:52:04 PM	18804
Surr: DNOP	123	69.6-155		%REC	1	4/23/2015 10:52:04 PM	18804
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	ND	0.050		mg/L	1	4/24/2015 1:41:08 AM	R25707
Surr: BFB	81.9	80-120		%REC	1	4/24/2015 1:41:08 AM	R25707
EPA METHOD 8260: VOLATILES SHORT LIST							Analyst: cadg
Benzene	ND	1.0		µg/L	1	4/24/2015 7:17:37 PM	R25753
Toluene	ND	1.0		µg/L	1	4/24/2015 7:17:37 PM	R25753
Ethylbenzene	ND	1.0		µg/L	1	4/24/2015 7:17:37 PM	R25753
Methyl tert-butyl ether (MTBE)	ND	1.0		µg/L	1	4/24/2015 7:17:37 PM	R25753
Xylenes, Total	ND	1.5		µg/L	1	4/24/2015 7:17:37 PM	R25753
Surr: 1,2-Dichloroethane-d4	95.8	70-130		%REC	1	4/24/2015 7:17:37 PM	R25753
Surr: 4-Bromofluorobenzene	107	70-130		%REC	1	4/24/2015 7:17:37 PM	R25753
Surr: Dibromofluoromethane	100	70-130		%REC	1	4/24/2015 7:17:37 PM	R25753
Surr: Toluene-d8	101	70-130		%REC	1	4/24/2015 7:17:37 PM	R25753

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.
	E	Value above quantitation range
	J	Analyte detected below quantitation limits
	O	RSD is greater than RSDlimit
	R	RPD outside accepted recovery limits
	S	Spike Recovery outside accepted recovery limits

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
P	Sample pH Not In Range
RL	Reporting Detection Limit

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1504934

Date Reported: 5/5/2015

CLIENT: Western Refining Southwest, Inc.

Client Sample ID: OW-22+00

Project: North Boundary Barrier 4-21-15

Collection Date: 4/21/2015 9:45:00 AM

Lab ID: 1504934-004

Matrix: AQUEOUS

Received Date: 4/22/2015 8:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015D: DIESEL RANGE							Analyst: KJH
Diesel Range Organics (DRO)	0.24	0.20		mg/L	1	4/23/2015 11:18:57 PM	18804
Motor Oil Range Organics (MRO)	ND	2.5		mg/L	1	4/23/2015 11:18:57 PM	18804
Surr: DNOP	102	69.6-155		%REC	1	4/23/2015 11:18:57 PM	18804
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	ND	0.050		mg/L	1	4/24/2015 2:10:22 AM	R25707
Surr: BFB	84.0	80-120		%REC	1	4/24/2015 2:10:22 AM	R25707
EPA METHOD 8260: VOLATILES SHORT LIST							Analyst: cadg
Benzene	ND	1.0		µg/L	1	4/24/2015 7:46:22 PM	R25753
Toluene	ND	1.0		µg/L	1	4/24/2015 7:46:22 PM	R25753
Ethylbenzene	ND	1.0		µg/L	1	4/24/2015 7:46:22 PM	R25753
Methyl tert-butyl ether (MTBE)	ND	1.0		µg/L	1	4/24/2015 7:46:22 PM	R25753
Xylenes, Total	ND	1.5		µg/L	1	4/24/2015 7:46:22 PM	R25753
Surr: 1,2-Dichloroethane-d4	95.7	70-130		%REC	1	4/24/2015 7:46:22 PM	R25753
Surr: 4-Bromofluorobenzene	103	70-130		%REC	1	4/24/2015 7:46:22 PM	R25753
Surr: Dibromofluoromethane	96.7	70-130		%REC	1	4/24/2015 7:46:22 PM	R25753
Surr: Toluene-d8	105	70-130		%REC	1	4/24/2015 7:46:22 PM	R25753

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank	Page 4 of 8
	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded	
	J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit	
	O	RSD is greater than RSDlimit	P	Sample pH Not In Range	
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit	
	S	Spike Recovery outside accepted recovery limits			

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1504934

Date Reported: 5/5/2015

CLIENT: Western Refining Southwest, Inc.

Client Sample ID: Rinsate

Project: North Boundary Barrier 4-21-15

Collection Date: 4/21/2015 1:20:00 PM

Lab ID: 1504934-005

Matrix: AQUEOUS

Received Date: 4/22/2015 8:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260: VOLATILES SHORT LIST						Analyst: cadg	
Benzene	ND	1.0		µg/L	1	4/24/2015 8:15:10 PM	R25753
Toluene	ND	1.0		µg/L	1	4/24/2015 8:15:10 PM	R25753
Ethylbenzene	ND	1.0		µg/L	1	4/24/2015 8:15:10 PM	R25753
Methyl tert-butyl ether (MTBE)	ND	1.0		µg/L	1	4/24/2015 8:15:10 PM	R25753
Xylenes, Total	ND	1.5		µg/L	1	4/24/2015 8:15:10 PM	R25753
Surr: 1,2-Dichloroethane-d4	103	70-130		%REC	1	4/24/2015 8:15:10 PM	R25753
Surr: 4-Bromofluorobenzene	108	70-130		%REC	1	4/24/2015 8:15:10 PM	R25753
Surr: Dibromofluoromethane	108	70-130		%REC	1	4/24/2015 8:15:10 PM	R25753
Surr: Toluene-d8	101	70-130		%REC	1	4/24/2015 8:15:10 PM	R25753

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
	J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
	O	RSD is greater than RSDlimit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	Spike Recovery outside accepted recovery limits		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1504934

05-May-15

Client: Western Refining Southwest, Inc.

Project: North Boundary Barrier 4-21-15

Sample ID	MB-18804		SampType:	MBLK		TestCode:	EPA Method 8015D: Diesel Range				
Client ID:	PBW		Batch ID:	18804		RunNo:	25693				
Prep Date:	4/21/2015		Analysis Date:	4/23/2015		SeqNo:	762153		Units: mg/L		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Diesel Range Organics (DRO)	ND	0.20									
Motor Oil Range Organics (MRO)	ND	2.5									
Surr: DNOP	0.54		0.5000		108	69.6	155				

Sample ID	LCS-18804		SampType: LCS		TestCode: EPA Method 8015D: Diesel Range					
Client ID:	LCSW		Batch ID: 18804		RunNo: 25693					
Prep Date:	4/21/2015		Analysis Date: 4/23/2015		SeqNo: 762154		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	3.1	0.20	2.500	0	123	65.8	162			
Surr: DNOP	0.30		0.2500		119	69.6	155			

Qualifiers:

* Value exceeds Maximum Contaminant Level.
E Value above quantitation range
J Analyte detected below quantitation limits
O RSD is greater than RSDlimit
R RPD outside accepted recovery limits
S Spike Recovery outside accepted recovery limits

B Analyte detected in the associated Method Blank
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
P Sample pH Not In Range
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1504934

05-May-15

Client: Western Refining Southwest, Inc.

Project: North Boundary Barrier 4-21-15

Sample ID	5ML RBB		SampType: MBLK		TestCode: EPA Method 8015D: Gasoline Range					
Client ID:	PBW		Batch ID: R25707		RunNo: 25707					
Prep Date:			Analysis Date: 4/23/2015		SeqNo: 762025		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	0.050								
Surr: BFB	17		20.00		83.6	80	120			

Sample ID	2.5UG GRO LCSB		SampType: LCS		TestCode: EPA Method 8015D: Gasoline Range					
Client ID:	LCSW		Batch ID: R25707		RunNo: 25707					
Prep Date:			Analysis Date: 4/23/2015		SeqNo: 762026		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	0.49	0.050	0.5000	0	98.2	80	120			
Surr: BFB	18		20.00		88.7	80	120			

Qualifiers:

* Value exceeds Maximum Contaminant Level.
E Value above quantitation range
J Analyte detected below quantitation limits
O RSD is greater than RSDlimit
R RPD outside accepted recovery limits
S Spike Recovery outside accepted recovery limits

B Analyte detected in the associated Method Blank
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
P Sample pH Not In Range
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1504934

05-May-15

Client: Western Refining Southwest, Inc.

Project: North Boundary Barrier 4-21-15

Sample ID	5mL rb	SampType:	MBLK	TestCode:	EPA Method 8260: Volatiles Short List					
Client ID:	PBW	Batch ID:	R25753	RunNo:	25753					
Prep Date:		Analysis Date:	4/24/2015	SeqNo:	763372	Units:	µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	1.0								
Toluene	ND	1.0								
Ethylbenzene	ND	1.0								
Methyl tert-butyl ether (MTBE)	ND	1.0								
Xylenes, Total	ND	1.5								
Surr: 1,2-Dichloroethane-d4	10		10.00		103	70	130			
Surr: 4-Bromofluorobenzene	11		10.00		107	70	130			
Surr: Dibromofluoromethane	11		10.00		106	70	130			
Surr: Toluene-d8	11		10.00		106	70	130			

Sample ID	100ng lcs	SampType:	LCS	TestCode:	EPA Method 8260: Volatiles Short List					
Client ID:	LCSW	Batch ID:	R25753	RunNo:	25753					
Prep Date:		Analysis Date:	4/24/2015	SeqNo:	763373	Units:	µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	21	1.0	20.00	0	104	70	130			
Toluene	19	1.0	20.00	0	96.5	70	130			
Surr: 1,2-Dichloroethane-d4	9.8		10.00		97.8	70	130			
Surr: 4-Bromofluorobenzene	11		10.00		109	70	130			
Surr: Dibromofluoromethane	10		10.00		101	70	130			
Surr: Toluene-d8	10		10.00		101	70	130			

Qualifiers:

* Value exceeds Maximum Contaminant Level.
E Value above quantitation range
J Analyte detected below quantitation limits
O RSD is greater than RSDlimit
R RPD outside accepted recovery limits
S Spike Recovery outside accepted recovery limits

B Analyte detected in the associated Method Blank
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
P Sample pH Not In Range
RL Reporting Detection Limit

Sample Log-In Check List

Client Name: Western Refining Southw

Work Order Number: 1504934

RcptNo: 1

Received by/date:

AT 04/22/15

Logged By: Lindsay Mangin

4/22/2015 8:00:00 AM



Completed By: Lindsay Mangin

4/22/2015 8:30:19 AM



Reviewed By:

JA 04/22/15

Chain of Custody

1. Custody seals intact on sample bottles? Yes ☐ No ☐ Not Present ☒
2. Is Chain of Custody complete? Yes ☒ No ☐ Not Present ☐
3. How was the sample delivered? Courier

Log In

4. Was an attempt made to cool the samples? Yes ☒ No ☐ NA ☐
5. Were all samples received at a temperature of >0° C to 6.0°C Yes ☒ No ☐ NA ☐
6. Sample(s) in proper container(s)? Yes ☒ No ☐
7. Sufficient sample volume for indicated test(s)? Yes ☒ No ☐
8. Are samples (except VOA and ONG) properly preserved? Yes ☒ No ☐
9. Was preservative added to bottles? Yes ☐ No ☒ NA ☐
10. VOA vials have zero headspace? Yes ☒ No ☐ No VOA Vials ☐
11. Were any sample containers received broken? Yes ☐ No ☒
12. Does paperwork match bottle labels?
(Note discrepancies on chain of custody) Yes ☒ No ☐
13. Are matrices correctly identified on Chain of Custody? Yes ☒ No ☐
14. Is it clear what analyses were requested? Yes ☒ No ☐
15. Were all holding times able to be met?
(If no, notify customer for authorization.) Yes ☒ No ☐

of preserved
bottles checked
for pH:

(<2 or >12 unless noted)

Adjusted?

Checked by:

Special Handling (if applicable)

16. Was client notified of all discrepancies with this order? Yes ☐ No ☐ NA ☒

Person Notified:

Date

By Whom:

Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding:

Client Instructions:

17. Additional remarks:

18. Cooler Information

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	1.0	Good	Yes			

Chain-of-Custody Record

Client: Western RefiningMailing Address: #50 CR 4990Bloomfield, NM 87413Phone #: 505-632-4135

email or Fax#:

QA/QC Package:

☐ Standard☒ Level 4 (Full Validation)

Accreditation

☐ NELAP☐ Other☐ EDD (Type)Sample Temperature: 1.0Sampler: Bob + MattOn Ice: ☒ Yes ☐ No

Date Time Matrix Sample Request ID

1-21-15 9:00 H₂O OW - 25+70

9:15 1-500 OW - 23+90

9:30 1-500 OW - 23+10

9:45 1-500 OW - 22+00

1:20 3-500 ~~OW - 22+00~~ Bin site

Container Type and #

5-10A

1-500

5-10A

1-500

5-10A

1-500

3-10A

Preservative Type

HCl

Amber

HCl

Amber

HCl

Amber

HCl

HEAL No.

150-1934

-001

-001

-002

-002

-003

-003

-004

-005

Turn-Around Time:

☒ Standard ☐ Rush

Project Name:

North Boundary Barrier

Project #:

PO # 12610956

Project Manager:

HALL ENVIRONMENTAL
ANALYSIS LABORATORY

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

Tel. 505-345-3975 Fax 505-345-4107

Analysis Request

BTEX + MTBE + TMB's (8021)	BTEX + MTBE + TPH (Gas only)	TPH 8015B (GRO)	TPH (Method 418.1)	EDB (Method 504.1)	PAH's (8310 or 8270 SIMS)	RCRA 8 Metals	Anions (F, Cl, NO ₃ , NO ₂ , PO ₄ , SO ₄)	8081 Pesticides / 8082 PCB's	8260B (VOA) BTEX, MTBE only	8270 (Semi-VOA)	D20-Ext. B015B	Air Bubbles (Y or N)
		X							X		X	
		X							X		X	
		X							X		X	
		X							X		X	
		X							X		X	

Remarks:

Received by: Mustafa White Date: 4/21/15 Time: 1357Received by: Chris White Date: 04/22/15 Time: 0800Date: 1-21-15 Time: 1357Date: 1-21-15 Time: 1740

TABLE 2
Analytical Methods and Target Analytes

VOCs (EPA Method 8260B) ⁽¹⁾
- Target List
Benzene
Toluene
Ethylbenzene
Xylenes
Methyl tert butyl ether (MTBE)
SVOCs - (EPA Method 8270)
- Method List
TPH-GRO (EPA Method 8015B)
- Gasoline Range Organics
TPH-DRO (EPA Method 8015B)
- Diesel Range Organics
- Motor Oil Range Organics
Total Carbon Dioxide (Laboratory Calculated)
- Dissolved CO ₂
Specific Conductivity (EPA Method 120.1 or field measurement)
- Specific conductance
TDS (EPA Method 160.1 or field measurement)
- Total dissolved solids
General Chemistry - Anions (EPA Method 300.0)
Fluoride
Chloride
Bromide
Nitrogen, Nitrite (as N)
Nitrogen, Nitrate (as N)
Phosphorous, Orthophosphate (As P)
Sulfate
General Chemistry - Alkalinity (EPA Method 310.1)
Alkalinity, Total
Carbonate
Bicarbonate

Total Recoverable Metals (EPA Method 6010B/7470)
- Target List (not applicable to River Terrace Sampling Events)
Arsenic
Barium
Cadmium
Chromium
Lead
Mercury
Selenium
Silver
- Target List (for River Terrace Sampling Events Only)
Lead
Mercury (DW-1 ONLY)
Dissolved Metals (EPA Method 6010B / 7470)
- Target List (for Refinery Complex, Outfalls, and River)
Arsenic
Barium
Cadmium
Calcium
Chromium
Copper
Iron
Lead
Magnesium
Manganese
Mercury
Potassium
Selenium
Silver
Sodium
Uranium
Zinc

TPH = total petroleum hydrocarbons
GRO = gasoline range organics
VOCs = volatile organic compounds
DRO = diesel range organics
TDS = total dissolved solids

NOTES:

- (1) VOCs Target List for River Terrace samples are analyzed by EPA Method 8021B per NMED's letter Approval with Direction dated June 16, 2009.
- (2) Target List for San Juan River Terrace Monitoring Wells and Piezometer Wells only, per the River Terrace Bioventing System Monitoring Plan.



Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

May 14, 2015

Kelly Robinson

Western Refining Southwest, Inc.

#50 CR 4990

Bloomfield, NM 87413

TEL: (505) 632-4166

FAX (505) 632-3911

RE: San Juan River 4-22-15

OrderNo.: 1504A00

Dear Kelly Robinson:

Hall Environmental Analysis Laboratory received 4 sample(s) on 4/23/2015 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to www.hallenvironmental.com or the state specific web sites. In order to properly interpret your results it is imperative that you review this report in its entirety. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. When necessary, data qualifiers are provided on both the sample analysis report and the QC summary report, both sections should be reviewed. All samples are reported, as received, unless otherwise indicated. Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH and residual chlorine are qualified as being analyzed outside of the recommended holding time.

Please don't hesitate to contact HEAL for any additional information or clarifications.

ADHS Cert #AZ0682 -- NMED-DWB Cert #NM9425 -- NMED-Micro Cert #NM0190

Sincerely,

A handwritten signature in black ink, appearing to read "Andy Freeman", with a stylized flourish at the end.

Andy Freeman

Laboratory Manager

4901 Hawkins NE

Albuquerque, NM 87109

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1504A00

Date Reported: 5/14/2015

CLIENT: Western Refining Southwest, Inc.

Client Sample ID: Up Stream

Project: San Juan River 4-22-15

Collection Date: 4/22/2015 12:00:00 PM

Lab ID: 1504A00-001

Matrix: AQUEOUS

Received Date: 4/23/2015 8:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015D: DIESEL RANGE							Analyst: KJH
Diesel Range Organics (DRO)	ND	0.20		mg/L	1	4/23/2015 11:45:54 PM	18804
Motor Oil Range Organics (MRO)	ND	2.5		mg/L	1	4/23/2015 11:45:54 PM	18804
Surr: DNOP	124	69.6-155		%REC	1	4/23/2015 11:45:54 PM	18804
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	ND	0.050		mg/L	1	4/24/2015 2:33:32 PM	R25755
Surr: BFB	90.1	80-120		%REC	1	4/24/2015 2:33:32 PM	R25755
EPA METHOD 300.0: ANIONS							Analyst: LGT
Fluoride	0.21	0.10		mg/L	1	4/23/2015 11:41:56 PM	R25726
Chloride	4.3	0.50		mg/L	1	4/23/2015 11:41:56 PM	R25726
Nitrogen, Nitrite (As N)	ND	0.10		mg/L	1	4/23/2015 11:41:56 PM	R25726
Bromide	ND	0.10		mg/L	1	4/23/2015 11:41:56 PM	R25726
Nitrogen, Nitrate (As N)	ND	0.10		mg/L	1	4/23/2015 11:41:56 PM	R25726
Phosphorus, Orthophosphate (As P)	ND	0.50		mg/L	1	4/23/2015 11:41:56 PM	R25726
Sulfate	110	10		mg/L	20	4/23/2015 11:54:21 PM	R25726
EPA METHOD 7470: MERCURY							Analyst: MED
Mercury	ND	0.00020		mg/L	1	4/27/2015 1:39:58 PM	18893
EPA METHOD 6010B: DISSOLVED METALS							Analyst: ELS
Arsenic	ND	0.020		mg/L	1	4/24/2015 1:30:17 PM	R25737
Barium	0.056	0.020		mg/L	1	4/24/2015 1:30:17 PM	R25737
Cadmium	ND	0.0020		mg/L	1	4/24/2015 1:30:17 PM	R25737
Calcium	45	1.0		mg/L	1	4/24/2015 1:30:17 PM	R25737
Chromium	ND	0.0060		mg/L	1	4/24/2015 1:30:17 PM	R25737
Copper	ND	0.0060		mg/L	1	4/24/2015 1:30:17 PM	R25737
Iron	ND	0.020		mg/L	1	4/24/2015 1:30:17 PM	R25737
Lead	ND	0.0050		mg/L	1	4/24/2015 1:30:17 PM	R25737
Magnesium	7.1	1.0		mg/L	1	4/24/2015 1:30:17 PM	R25737
Manganese	0.034	0.0020		mg/L	1	4/24/2015 1:30:17 PM	R25737
Potassium	2.1	1.0		mg/L	1	4/24/2015 1:30:17 PM	R25737
Selenium	ND	0.050		mg/L	1	4/24/2015 1:30:17 PM	R25737
Silver	ND	0.0050		mg/L	1	4/24/2015 1:30:17 PM	R25737
Sodium	39	1.0		mg/L	1	4/24/2015 1:30:17 PM	R25737
Uranium	ND	0.10		mg/L	1	4/24/2015 1:30:17 PM	R25737
Zinc	ND	0.020		mg/L	1	4/24/2015 1:30:17 PM	R25737
EPA 6010B: TOTAL RECOVERABLE METALS							Analyst: ELS
Arsenic	ND	0.020		mg/L	1	4/26/2015 12:30:29 PM	18885
Barium	0.061	0.020		mg/L	1	4/26/2015 12:30:29 PM	18885
Cadmium	ND	0.0020		mg/L	1	4/26/2015 12:30:29 PM	18885

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
	J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
	O	RSD is greater than RSDlimit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	Spike Recovery outside accepted recovery limits		

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1504A00

Date Reported: 5/14/2015

CLIENT: Western Refining Southwest, Inc.

Client Sample ID: Up Stream

Project: San Juan River 4-22-15

Collection Date: 4/22/2015 12:00:00 PM

Lab ID: 1504A00-001

Matrix: AQUEOUS

Received Date: 4/23/2015 8:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA 6010B: TOTAL RECOVERABLE METALS							Analyst: ELS
Chromium	ND	0.0060		mg/L	1	4/26/2015 12:30:29 PM	18885
Lead	ND	0.0050		mg/L	1	4/26/2015 12:30:29 PM	18885
Selenium	ND	0.050		mg/L	1	4/26/2015 12:30:29 PM	18885
Silver	ND	0.0050		mg/L	1	4/26/2015 12:30:29 PM	18885
EPA METHOD 8260: VOLATILES SHORT LIST							Analyst: DJF
Benzene	ND	1.0		µg/L	1	4/29/2015 5:16:00 AM	R25818
Toluene	ND	1.0		µg/L	1	4/29/2015 5:16:00 AM	R25818
Ethylbenzene	ND	1.0		µg/L	1	4/29/2015 5:16:00 AM	R25818
Methyl tert-butyl ether (MTBE)	ND	1.0		µg/L	1	4/29/2015 5:16:00 AM	R25818
Xylenes, Total	ND	1.5		µg/L	1	4/29/2015 5:16:00 AM	R25818
Surr: 1,2-Dichloroethane-d4	105	70-130		%REC	1	4/29/2015 5:16:00 AM	R25818
Surr: 4-Bromofluorobenzene	96.1	70-130		%REC	1	4/29/2015 5:16:00 AM	R25818
Surr: Dibromofluoromethane	103	70-130		%REC	1	4/29/2015 5:16:00 AM	R25818
Surr: Toluene-d8	100	70-130		%REC	1	4/29/2015 5:16:00 AM	R25818
SM2320B: ALKALINITY							Analyst: JRR
Bicarbonate (As CaCO3)	99.56	20.00		mg/L CaCO3	1	4/27/2015 4:19:09 PM	R25808
Carbonate (As CaCO3)	ND	2.000		mg/L CaCO3	1	4/27/2015 4:19:09 PM	R25808
Total Alkalinity (as CaCO3)	99.56	20.00		mg/L CaCO3	1	4/27/2015 4:19:09 PM	R25808

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
	J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
	O	RSD is greater than RSDlimit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	Spike Recovery outside accepted recovery limits		

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1504A00

Date Reported: 5/14/2015

CLIENT: Western Refining Southwest, Inc.

Client Sample ID: Down Stream

Project: San Juan River 4-22-15

Collection Date: 4/22/2015 12:30:00 PM

Lab ID: 1504A00-002

Matrix: AQUEOUS

Received Date: 4/23/2015 8:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015D: DIESEL RANGE							Analyst: KJH
Diesel Range Organics (DRO)	ND	0.20		mg/L	1	4/24/2015 12:13:03 AM	18804
Motor Oil Range Organics (MRO)	ND	2.5		mg/L	1	4/24/2015 12:13:03 AM	18804
Surr: DNOP	122	69.6-155		%REC	1	4/24/2015 12:13:03 AM	18804
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	ND	0.050		mg/L	1	4/24/2015 3:02:43 PM	R25755
Surr: BFB	89.2	80-120		%REC	1	4/24/2015 3:02:43 PM	R25755
EPA METHOD 300.0: ANIONS							Analyst: LGT
Fluoride	0.21	0.10		mg/L	1	4/24/2015 12:56:24 AM	R25726
Chloride	3.9	0.50		mg/L	1	4/24/2015 12:56:24 AM	R25726
Nitrogen, Nitrite (As N)	ND	0.10		mg/L	1	4/24/2015 12:56:24 AM	R25726
Bromide	ND	0.10		mg/L	1	4/24/2015 12:56:24 AM	R25726
Nitrogen, Nitrate (As N)	ND	0.10		mg/L	1	4/24/2015 12:56:24 AM	R25726
Phosphorus, Orthophosphate (As P)	ND	0.50		mg/L	1	4/24/2015 12:56:24 AM	R25726
Sulfate	100	10		mg/L	20	4/24/2015 1:08:49 AM	R25726
EPA METHOD 7470: MERCURY							Analyst: MED
Mercury	ND	0.00020		mg/L	1	4/27/2015 1:41:44 PM	18893
EPA METHOD 6010B: DISSOLVED METALS							Analyst: ELS
Arsenic	ND	0.020		mg/L	1	4/24/2015 1:33:51 PM	R25737
Barium	0.055	0.020		mg/L	1	4/24/2015 1:33:51 PM	R25737
Cadmium	ND	0.0020		mg/L	1	4/24/2015 1:33:51 PM	R25737
Calcium	47	1.0		mg/L	1	4/24/2015 1:33:51 PM	R25737
Chromium	ND	0.0060		mg/L	1	4/24/2015 1:33:51 PM	R25737
Copper	ND	0.0060		mg/L	1	4/24/2015 1:33:51 PM	R25737
Iron	ND	0.020		mg/L	1	4/24/2015 1:33:51 PM	R25737
Lead	ND	0.0050		mg/L	1	4/24/2015 1:33:51 PM	R25737
Magnesium	7.2	1.0		mg/L	1	4/24/2015 1:33:51 PM	R25737
Manganese	0.062	0.0020		mg/L	1	4/24/2015 1:33:51 PM	R25737
Potassium	2.1	1.0		mg/L	1	4/24/2015 1:33:51 PM	R25737
Selenium	ND	0.050		mg/L	1	4/24/2015 1:33:51 PM	R25737
Silver	ND	0.0050		mg/L	1	4/24/2015 1:33:51 PM	R25737
Sodium	37	1.0		mg/L	1	4/24/2015 1:33:51 PM	R25737
Uranium	ND	0.10		mg/L	1	4/24/2015 1:33:51 PM	R25737
Zinc	ND	0.020		mg/L	1	4/24/2015 1:33:51 PM	R25737
EPA 6010B: TOTAL RECOVERABLE METALS							Analyst: ELS
Arsenic	ND	0.020		mg/L	1	4/26/2015 12:32:23 PM	18885
Barium	0.058	0.020		mg/L	1	4/26/2015 12:32:23 PM	18885
Cadmium	ND	0.0020		mg/L	1	4/26/2015 12:32:23 PM	18885

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
	J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
	O	RSD is greater than RSDlimit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	Spike Recovery outside accepted recovery limits		

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1504A00

Date Reported: 5/14/2015

CLIENT: Western Refining Southwest, Inc.

Client Sample ID: Down Stream

Project: San Juan River 4-22-15

Collection Date: 4/22/2015 12:30:00 PM

Lab ID: 1504A00-002

Matrix: AQUEOUS

Received Date: 4/23/2015 8:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA 6010B: TOTAL RECOVERABLE METALS							Analyst: ELS
Chromium	ND	0.0060		mg/L	1	4/26/2015 12:32:23 PM	18885
Lead	ND	0.0050		mg/L	1	4/26/2015 12:32:23 PM	18885
Selenium	ND	0.050		mg/L	1	4/26/2015 12:32:23 PM	18885
Silver	ND	0.0050		mg/L	1	4/26/2015 12:32:23 PM	18885
EPA METHOD 8260: VOLATILES SHORT LIST							Analyst: DJF
Benzene	ND	1.0		µg/L	1	4/29/2015 5:43:28 AM	R25818
Toluene	ND	1.0		µg/L	1	4/29/2015 5:43:28 AM	R25818
Ethylbenzene	ND	1.0		µg/L	1	4/29/2015 5:43:28 AM	R25818
Methyl tert-butyl ether (MTBE)	ND	1.0		µg/L	1	4/29/2015 5:43:28 AM	R25818
Xylenes, Total	ND	1.5		µg/L	1	4/29/2015 5:43:28 AM	R25818
Surr: 1,2-Dichloroethane-d4	101	70-130		%REC	1	4/29/2015 5:43:28 AM	R25818
Surr: 4-Bromofluorobenzene	98.5	70-130		%REC	1	4/29/2015 5:43:28 AM	R25818
Surr: Dibromofluoromethane	103	70-130		%REC	1	4/29/2015 5:43:28 AM	R25818
Surr: Toluene-d8	98.7	70-130		%REC	1	4/29/2015 5:43:28 AM	R25818
SM2320B: ALKALINITY							Analyst: JRR
Bicarbonate (As CaCO3)	102.6	20.00		mg/L CaCO3	1	4/27/2015 4:27:23 PM	R25808
Carbonate (As CaCO3)	ND	2.000		mg/L CaCO3	1	4/27/2015 4:27:23 PM	R25808
Total Alkalinity (as CaCO3)	102.6	20.00		mg/L CaCO3	1	4/27/2015 4:27:23 PM	R25808

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
	J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
	O	RSD is greater than RSDlimit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	Spike Recovery outside accepted recovery limits		

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1504A00

Date Reported: 5/14/2015

CLIENT: Western Refining Southwest, Inc.

Client Sample ID: North Of 45

Project: San Juan River 4-22-15

Collection Date: 4/22/2015 1:00:00 PM

Lab ID: 1504A00-003

Matrix: AQUEOUS

Received Date: 4/23/2015 8:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015D: DIESEL RANGE							Analyst: KJH
Diesel Range Organics (DRO)	ND	0.20		mg/L	1	4/24/2015 12:40:02 AM	18804
Motor Oil Range Organics (MRO)	ND	2.5		mg/L	1	4/24/2015 12:40:02 AM	18804
Surr: DNOP	115	69.6-155		%REC	1	4/24/2015 12:40:02 AM	18804
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	ND	0.050		mg/L	1	4/24/2015 3:32:03 PM	R25755
Surr: BFB	89.8	80-120		%REC	1	4/24/2015 3:32:03 PM	R25755
EPA METHOD 300.0: ANIONS							Analyst: LGT
Fluoride	0.20	0.10		mg/L	1	4/24/2015 1:21:14 AM	R25726
Chloride	3.8	0.50		mg/L	1	4/24/2015 1:21:14 AM	R25726
Nitrogen, Nitrite (As N)	ND	0.10		mg/L	1	4/24/2015 1:21:14 AM	R25726
Bromide	ND	0.10		mg/L	1	4/24/2015 1:21:14 AM	R25726
Nitrogen, Nitrate (As N)	ND	0.10		mg/L	1	4/24/2015 1:21:14 AM	R25726
Phosphorus, Orthophosphate (As P)	ND	0.50		mg/L	1	4/24/2015 1:21:14 AM	R25726
Sulfate	92	10		mg/L	20	4/24/2015 1:33:39 AM	R25726
EPA METHOD 7470: MERCURY							Analyst: MED
Mercury	ND	0.00020		mg/L	1	4/27/2015 1:43:29 PM	18893
EPA METHOD 6010B: DISSOLVED METALS							Analyst: ELS
Arsenic	ND	0.020		mg/L	1	4/24/2015 1:37:33 PM	R25737
Barium	0.056	0.020		mg/L	1	4/24/2015 1:37:33 PM	R25737
Cadmium	ND	0.0020		mg/L	1	4/24/2015 1:37:33 PM	R25737
Calcium	44	1.0		mg/L	1	4/24/2015 1:37:33 PM	R25737
Chromium	ND	0.0060		mg/L	1	4/24/2015 1:37:33 PM	R25737
Copper	ND	0.0060		mg/L	1	4/24/2015 1:37:33 PM	R25737
Iron	ND	0.020		mg/L	1	4/24/2015 1:37:33 PM	R25737
Lead	ND	0.0050		mg/L	1	4/24/2015 1:37:33 PM	R25737
Magnesium	6.8	1.0		mg/L	1	4/24/2015 1:37:33 PM	R25737
Manganese	0.010	0.0020		mg/L	1	4/24/2015 1:37:33 PM	R25737
Potassium	2.2	1.0		mg/L	1	4/24/2015 1:37:33 PM	R25737
Selenium	ND	0.050		mg/L	1	4/24/2015 1:37:33 PM	R25737
Silver	ND	0.0050		mg/L	1	4/24/2015 1:37:33 PM	R25737
Sodium	34	1.0		mg/L	1	4/24/2015 1:37:33 PM	R25737
Uranium	ND	0.10		mg/L	1	4/24/2015 1:37:33 PM	R25737
Zinc	0.050	0.020		mg/L	1	4/24/2015 1:37:33 PM	R25737
EPA 6010B: TOTAL RECOVERABLE METALS							Analyst: ELS
Arsenic	ND	0.020		mg/L	1	4/26/2015 12:34:15 PM	18885
Barium	0.060	0.020		mg/L	1	4/26/2015 12:34:15 PM	18885
Cadmium	ND	0.0020		mg/L	1	4/26/2015 12:34:15 PM	18885

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank	Page 5 of 17
	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded	
	J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit	
	O	RSD is greater than RSDlimit	P	Sample pH Not In Range	
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit	
	S	Spike Recovery outside accepted recovery limits			

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1504A00

Date Reported: 5/14/2015

CLIENT: Western Refining Southwest, Inc.

Client Sample ID: North Of 45

Project: San Juan River 4-22-15

Collection Date: 4/22/2015 1:00:00 PM

Lab ID: 1504A00-003

Matrix: AQUEOUS

Received Date: 4/23/2015 8:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA 6010B: TOTAL RECOVERABLE METALS							Analyst: ELS
Chromium	ND	0.0060		mg/L	1	4/26/2015 12:34:15 PM	18885
Lead	ND	0.0050		mg/L	1	4/26/2015 12:34:15 PM	18885
Selenium	ND	0.050		mg/L	1	4/26/2015 12:34:15 PM	18885
Silver	ND	0.0050		mg/L	1	4/26/2015 12:34:15 PM	18885
EPA METHOD 8260: VOLATILES SHORT LIST							Analyst: DJF
Benzene	ND	1.0		µg/L	1	4/29/2015 6:10:57 AM	R25818
Toluene	ND	1.0		µg/L	1	4/29/2015 6:10:57 AM	R25818
Ethylbenzene	ND	1.0		µg/L	1	4/29/2015 6:10:57 AM	R25818
Methyl tert-butyl ether (MTBE)	ND	1.0		µg/L	1	4/29/2015 6:10:57 AM	R25818
Xylenes, Total	ND	1.5		µg/L	1	4/29/2015 6:10:57 AM	R25818
Surr: 1,2-Dichloroethane-d4	105	70-130		%REC	1	4/29/2015 6:10:57 AM	R25818
Surr: 4-Bromofluorobenzene	101	70-130		%REC	1	4/29/2015 6:10:57 AM	R25818
Surr: Dibromofluoromethane	99.7	70-130		%REC	1	4/29/2015 6:10:57 AM	R25818
Surr: Toluene-d8	93.7	70-130		%REC	1	4/29/2015 6:10:57 AM	R25818
SM2320B: ALKALINITY							Analyst: JRR
Bicarbonate (As CaCO3)	99.68	20.00		mg/L CaCO3	1	4/27/2015 4:35:42 PM	R25808
Carbonate (As CaCO3)	ND	2.000		mg/L CaCO3	1	4/27/2015 4:35:42 PM	R25808
Total Alkalinity (as CaCO3)	99.68	20.00		mg/L CaCO3	1	4/27/2015 4:35:42 PM	R25808

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank	Page 6 of 17
	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded	
	J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit	
	O	RSD is greater than RSDlimit	P	Sample pH Not In Range	
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit	
	S	Spike Recovery outside accepted recovery limits			

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1504A00

Date Reported: 5/14/2015

CLIENT: Western Refining Southwest, Inc.

Client Sample ID: North Of 46

Project: San Juan River 4-22-15

Collection Date: 4/22/2015 1:30:00 PM

Lab ID: 1504A00-004

Matrix: AQUEOUS

Received Date: 4/23/2015 8:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015D: DIESEL RANGE							Analyst: KJH
Diesel Range Organics (DRO)	ND	0.20		mg/L	1	4/24/2015 1:07:06 AM	18804
Motor Oil Range Organics (MRO)	ND	2.5		mg/L	1	4/24/2015 1:07:06 AM	18804
Surr: DNOP	125	69.6-155		%REC	1	4/24/2015 1:07:06 AM	18804
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	ND	0.050		mg/L	1	4/24/2015 4:01:21 PM	R25755
Surr: BFB	85.5	80-120		%REC	1	4/24/2015 4:01:21 PM	R25755
EPA METHOD 300.0: ANIONS							Analyst: LGT
Fluoride	0.21	0.10		mg/L	1	4/24/2015 1:46:03 AM	R25726
Chloride	3.8	0.50		mg/L	1	4/24/2015 1:46:03 AM	R25726
Nitrogen, Nitrite (As N)	ND	0.10		mg/L	1	4/24/2015 1:46:03 AM	R25726
Bromide	ND	0.10		mg/L	1	4/24/2015 1:46:03 AM	R25726
Nitrogen, Nitrate (As N)	ND	0.10		mg/L	1	4/24/2015 1:46:03 AM	R25726
Phosphorus, Orthophosphate (As P)	ND	0.50		mg/L	1	4/24/2015 1:46:03 AM	R25726
Sulfate	93	10		mg/L	20	4/24/2015 1:58:27 AM	R25726
EPA METHOD 7470: MERCURY							Analyst: MED
Mercury	ND	0.00020		mg/L	1	4/27/2015 1:45:16 PM	18893
EPA METHOD 6010B: DISSOLVED METALS							Analyst: ELS
Arsenic	ND	0.020		mg/L	1	4/24/2015 1:46:29 PM	R25737
Barium	0.057	0.020		mg/L	1	4/24/2015 1:46:29 PM	R25737
Cadmium	ND	0.0020		mg/L	1	4/24/2015 1:46:29 PM	R25737
Calcium	44	1.0		mg/L	1	4/24/2015 1:46:29 PM	R25737
Chromium	ND	0.0060		mg/L	1	4/24/2015 1:46:29 PM	R25737
Copper	ND	0.0060		mg/L	1	4/24/2015 1:46:29 PM	R25737
Iron	0.028	0.020		mg/L	1	4/24/2015 1:46:29 PM	R25737
Lead	ND	0.0050		mg/L	1	4/24/2015 1:46:29 PM	R25737
Magnesium	6.7	1.0		mg/L	1	4/24/2015 1:46:29 PM	R25737
Manganese	0.011	0.0020		mg/L	1	4/24/2015 1:46:29 PM	R25737
Potassium	2.2	1.0		mg/L	1	4/24/2015 1:46:29 PM	R25737
Selenium	ND	0.050		mg/L	1	4/24/2015 1:46:29 PM	R25737
Silver	ND	0.0050		mg/L	1	4/24/2015 1:46:29 PM	R25737
Sodium	33	1.0		mg/L	1	4/24/2015 1:46:29 PM	R25737
Uranium	ND	0.10		mg/L	1	4/24/2015 1:46:29 PM	R25737
Zinc	0.023	0.020		mg/L	1	4/24/2015 1:46:29 PM	R25737
EPA 6010B: TOTAL RECOVERABLE METALS							Analyst: ELS
Arsenic	ND	0.020		mg/L	1	4/26/2015 12:36:08 PM	18885
Barium	0.062	0.020		mg/L	1	4/26/2015 12:36:08 PM	18885
Cadmium	ND	0.0020		mg/L	1	4/26/2015 12:36:08 PM	18885

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank	Page 7 of 17
	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded	
	J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit	
	O	RSD is greater than RSDlimit	P	Sample pH Not In Range	
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit	
	S	Spike Recovery outside accepted recovery limits			

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1504A00

Date Reported: 5/14/2015

CLIENT: Western Refining Southwest, Inc.

Client Sample ID: North Of 46

Project: San Juan River 4-22-15

Collection Date: 4/22/2015 1:30:00 PM

Lab ID: 1504A00-004

Matrix: AQUEOUS

Received Date: 4/23/2015 8:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA 6010B: TOTAL RECOVERABLE METALS							Analyst: ELS
Chromium	ND	0.0060		mg/L	1	4/26/2015 12:36:08 PM	18885
Lead	ND	0.0050		mg/L	1	4/26/2015 12:36:08 PM	18885
Selenium	ND	0.050		mg/L	1	4/26/2015 12:36:08 PM	18885
Silver	ND	0.0050		mg/L	1	4/26/2015 12:36:08 PM	18885
EPA METHOD 8260: VOLATILES SHORT LIST							Analyst: DJF
Benzene	ND	1.0		µg/L	1	4/29/2015 6:38:13 AM	R25818
Toluene	ND	1.0		µg/L	1	4/29/2015 6:38:13 AM	R25818
Ethylbenzene	ND	1.0		µg/L	1	4/29/2015 6:38:13 AM	R25818
Methyl tert-butyl ether (MTBE)	ND	1.0		µg/L	1	4/29/2015 6:38:13 AM	R25818
Xylenes, Total	ND	1.5		µg/L	1	4/29/2015 6:38:13 AM	R25818
Surr: 1,2-Dichloroethane-d4	108	70-130		%REC	1	4/29/2015 6:38:13 AM	R25818
Surr: 4-Bromofluorobenzene	95.4	70-130		%REC	1	4/29/2015 6:38:13 AM	R25818
Surr: Dibromofluoromethane	98.1	70-130		%REC	1	4/29/2015 6:38:13 AM	R25818
Surr: Toluene-d8	96.8	70-130		%REC	1	4/29/2015 6:38:13 AM	R25818
SM2320B: ALKALINITY							Analyst: JRR
Bicarbonate (As CaCO3)	99.60	20.00		mg/L CaCO3	1	4/27/2015 4:44:04 PM	R25808
Carbonate (As CaCO3)	ND	2.000		mg/L CaCO3	1	4/27/2015 4:44:04 PM	R25808
Total Alkalinity (as CaCO3)	99.60	20.00		mg/L CaCO3	1	4/27/2015 4:44:04 PM	R25808

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
	J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
	O	RSD is greater than RSDlimit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	Spike Recovery outside accepted recovery limits		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1504A00

14-May-15

Client: Western Refining Southwest, Inc.

Project: San Juan River 4-22-15

Sample ID MB	SampType: MBLK		TestCode: EPA Method 300.0: Anions							
Client ID: PBW	Batch ID: R25726		RunNo: 25726							
Prep Date:	Analysis Date: 4/23/2015		SeqNo: 762606		Units: mg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	ND	0.10								
Chloride	ND	0.50								
Nitrogen, Nitrite (As N)	ND	0.10								
Bromide	ND	0.10								
Nitrogen, Nitrate (As N)	ND	0.10								
Phosphorus, Orthophosphate (As P)	ND	0.50								
Sulfate	ND	0.50								

Sample ID LCS	SampType: LCS		TestCode: EPA Method 300.0: Anions							
Client ID: LCSW	Batch ID: R25726		RunNo: 25726							
Prep Date:	Analysis Date: 4/23/2015		SeqNo: 762607		Units: mg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	0.49	0.10	0.5000	0	98.2	90	110			
Chloride	5.0	0.50	5.000	0	99.5	90	110			
Nitrogen, Nitrite (As N)	1.0	0.10	1.000	0	102	90	110			
Bromide	2.6	0.10	2.500	0	103	90	110			
Nitrogen, Nitrate (As N)	2.6	0.10	2.500	0	104	90	110			
Phosphorus, Orthophosphate (As P)	4.9	0.50	5.000	0	97.5	90	110			
Sulfate	10	0.50	10.00	0	100	90	110			

Sample ID MB	SampType: MBLK		TestCode: EPA Method 300.0: Anions							
Client ID: PBW	Batch ID: R25726		RunNo: 25726							
Prep Date:	Analysis Date: 4/23/2015		SeqNo: 762657		Units: mg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	ND	0.10								
Chloride	ND	0.50								
Nitrogen, Nitrite (As N)	ND	0.10								
Bromide	ND	0.10								
Nitrogen, Nitrate (As N)	ND	0.10								
Phosphorus, Orthophosphate (As P)	ND	0.50								
Sulfate	ND	0.50								

Sample ID LCS	SampType: LCS		TestCode: EPA Method 300.0: Anions							
Client ID: LCSW	Batch ID: R25726		RunNo: 25726							
Prep Date:	Analysis Date: 4/23/2015		SeqNo: 762658		Units: mg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	0.49	0.10	0.5000	0	98.6	90	110			

Qualifiers:

* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank
E Value above quantitation range	H Holding times for preparation or analysis exceeded
J Analyte detected below quantitation limits	ND Not Detected at the Reporting Limit
O RSD is greater than RSDlimit	P Sample pH Not In Range
R RPD outside accepted recovery limits	RL Reporting Detection Limit
S Spike Recovery outside accepted recovery limits	

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1504A00

14-May-15

Client: Western Refining Southwest, Inc.

Project: San Juan River 4-22-15

Sample ID LCS	SampType: LCS		TestCode: EPA Method 300.0: Anions							
Client ID: LCSW	Batch ID: R25726		RunNo: 25726							
Prep Date:	Analysis Date: 4/23/2015		SeqNo: 762658		Units: mg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	4.7	0.50	5.000	0	94.0	90	110			
Nitrogen, Nitrite (As N)	0.97	0.10	1.000	0	96.7	90	110			
Bromide	2.4	0.10	2.500	0	95.9	90	110			
Nitrogen, Nitrate (As N)	2.4	0.10	2.500	0	97.9	90	110			
Phosphorus, Orthophosphate (As P)	4.7	0.50	5.000	0	93.9	90	110			
Sulfate	9.4	0.50	10.00	0	93.8	90	110			

Sample ID 1504A00-001DMS	SampType: MS		TestCode: EPA Method 300.0: Anions							
Client ID: Up Stream	Batch ID: R25726		RunNo: 25726							
Prep Date:	Analysis Date: 4/24/2015		SeqNo: 762663		Units: mg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	0.68	0.10	0.5000	0.2096	94.5	66.1	113			
Chloride	9.5	0.50	5.000	4.288	105	81.8	112			
Nitrogen, Nitrite (As N)	0.97	0.10	1.000	0	97.3	66.4	111			
Bromide	2.5	0.10	2.500	0	100	82.5	103			
Nitrogen, Nitrate (As N)	2.6	0.10	2.500	0	103	84	109			
Phosphorus, Orthophosphate (As P)	4.8	0.50	5.000	0	95.7	69	109			

Sample ID 1504A00-001DMSD	SampType: MSD		TestCode: EPA Method 300.0: Anions							
Client ID: Up Stream	Batch ID: R25726		RunNo: 25726							
Prep Date:	Analysis Date: 4/24/2015		SeqNo: 762664		Units: mg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	0.69	0.10	0.5000	0.2096	95.3	66.1	113	0.643	20	
Chloride	9.5	0.50	5.000	4.288	105	81.8	112	0.162	20	
Nitrogen, Nitrite (As N)	0.98	0.10	1.000	0	98.5	66.4	111	1.27	20	
Bromide	2.5	0.10	2.500	0	100	82.5	103	0.244	20	
Nitrogen, Nitrate (As N)	2.6	0.10	2.500	0	103	84	109	0.284	20	
Phosphorus, Orthophosphate (As P)	4.8	0.50	5.000	0	95.7	69	109	0.0752	20	

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- O RSD is greater than RSDlimit
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- P Sample pH Not In Range
- RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1504A00

14-May-15

Client: Western Refining Southwest, Inc.

Project: San Juan River 4-22-15

Sample ID	MB-18804		SampType: MBLK		TestCode: EPA Method 8015D: Diesel Range					
Client ID:	PBW		Batch ID: 18804		RunNo: 25693					
Prep Date:	4/21/2015		Analysis Date: 4/23/2015		SeqNo: 762153		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	0.20								
Motor Oil Range Organics (MRO)	ND	2.5								
Surr: DNOP	0.54		0.5000		108	69.6	155			

Sample ID	LCS-18804		SampType: LCS		TestCode: EPA Method 8015D: Diesel Range					
Client ID:	LCSW		Batch ID: 18804		RunNo: 25693					
Prep Date:	4/21/2015		Analysis Date: 4/23/2015		SeqNo: 762154		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	3.1	0.20	2.500	0	123	65.8	162			
Surr: DNOP	0.30		0.2500		119	69.6	155			

Qualifiers:

* Value exceeds Maximum Contaminant Level.
E Value above quantitation range
J Analyte detected below quantitation limits
O RSD is greater than RSDlimit
R RPD outside accepted recovery limits
S Spike Recovery outside accepted recovery limits

B Analyte detected in the associated Method Blank
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
P Sample pH Not In Range
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1504A00

14-May-15

Client: Western Refining Southwest, Inc.

Project: San Juan River 4-22-15

Sample ID	5ML RB		SampType: MBLK		TestCode: EPA Method 8015D: Gasoline Range					
Client ID:	PBW		Batch ID: R25755		RunNo: 25755					
Prep Date:			Analysis Date: 4/24/2015		SeqNo: 763440		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	0.050								
Surr: BFB	17		20.00		85.4	80	120			

Sample ID	2.5UG GRO LCS		SampType: LCS		TestCode: EPA Method 8015D: Gasoline Range					
Client ID:	LCSW		Batch ID: R25755		RunNo: 25755					
Prep Date:			Analysis Date: 4/24/2015		SeqNo: 763441		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	0.52	0.050	0.5000	0	104	80	120			
Surr: BFB	19		20.00		96.3	80	120			

Qualifiers:

* Value exceeds Maximum Contaminant Level.
E Value above quantitation range
J Analyte detected below quantitation limits
O RSD is greater than RSDlimit
R RPD outside accepted recovery limits
S Spike Recovery outside accepted recovery limits

B Analyte detected in the associated Method Blank
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
P Sample pH Not In Range
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1504A00

14-May-15

Client: Western Refining Southwest, Inc.

Project: San Juan River 4-22-15

Sample ID	5ml rb	SampType:	MBLK	TestCode:	EPA Method 8260: Volatiles Short List					
Client ID:	PBW	Batch ID:	R25818	RunNo:	25818					
Prep Date:		Analysis Date:	4/28/2015	SeqNo:	765184	Units:	µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	1.0								
Toluene	ND	1.0								
Ethylbenzene	ND	1.0								
Methyl tert-butyl ether (MTBE)	ND	1.0								
Xylenes, Total	ND	1.5								
Surr: 1,2-Dichloroethane-d4	9.7		10.00		97.4	70	130			
Surr: 4-Bromofluorobenzene	9.6		10.00		95.9	70	130			
Surr: Dibromofluoromethane	10		10.00		101	70	130			
Surr: Toluene-d8	10		10.00		99.8	70	130			

Sample ID	100nglcs200T2lcs	SampType:	LCS	TestCode:	EPA Method 8260: Volatiles Short List					
Client ID:	LCSW	Batch ID:	R25818	RunNo:	25818					
Prep Date:		Analysis Date:	4/28/2015	SeqNo:	765185	Units:	µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	21	1.0	20.00	0	107	70	130			
Toluene	19	1.0	20.00	0	97.4	70	130			
Surr: 1,2-Dichloroethane-d4	9.9		10.00		98.9	70	130			
Surr: 4-Bromofluorobenzene	9.4		10.00		94.3	70	130			
Surr: Dibromofluoromethane	9.3		10.00		93.3	70	130			
Surr: Toluene-d8	10		10.00		100	70	130			

Qualifiers:

* Value exceeds Maximum Contaminant Level.
E Value above quantitation range
J Analyte detected below quantitation limits
O RSD is greater than RSDlimit
R RPD outside accepted recovery limits
S Spike Recovery outside accepted recovery limits

B Analyte detected in the associated Method Blank
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
P Sample pH Not In Range
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1504A00

14-May-15

Client: Western Refining Southwest, Inc.

Project: San Juan River 4-22-15

Sample ID	MB-18893		SampType:	MBLK		TestCode:	EPA Method 7470: Mercury				
Client ID:	PBW		Batch ID:	18893		RunNo:	25786				
Prep Date:	4/27/2015		Analysis Date:	4/27/2015		SeqNo:	764210		Units: mg/L		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Mercurv	ND	0.00020									

Sample ID	LCS-18893			SampType:	LCS		TestCode:	EPA Method 7470: Mercury			
Client ID:	LCSW			Batch ID:	18893		RunNo:	25786			
Prep Date:	4/27/2015			Analysis Date:	4/27/2015		SeqNo:	764211		Units:	mg/L
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Mercury	0.0052	0.00020	0.005000	0	103	80	120				

Qualifiers:

* Value exceeds Maximum Contaminant Level.
E Value above quantitation range
J Analyte detected below quantitation limits
O RSD is greater than RSDlimit
R RPD outside accepted recovery limits
S Spike Recovery outside accepted recovery limits

B Analyte detected in the associated Method Blank
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
P Sample pH Not In Range
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1504A00

14-May-15

Client: Western Refining Southwest, Inc.

Project: San Juan River 4-22-15

Sample ID	MB	SampType:	MBLK	TestCode:	EPA Method 6010B: Dissolved Metals					
Client ID:	PBW	Batch ID:	R25737	RunNo:	25737					
Prep Date:		Analysis Date:	4/24/2015	SeqNo:	762885	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	ND	0.020								
Barium	ND	0.020								
Cadmium	ND	0.0020								
Calcium	ND	1.0								
Chromium	ND	0.0060								
Copper	ND	0.0060								
Iron	ND	0.020								
Lead	ND	0.0050								
Magnesium	ND	1.0								
Manganese	ND	0.0020								
Potassium	ND	1.0								
Selenium	ND	0.050								
Silver	ND	0.0050								
Sodium	ND	1.0								
Uranium	ND	0.10								
Zinc	ND	0.020								

Sample ID	LCS	SampType:	LCS	TestCode:	EPA Method 6010B: Dissolved Metals					
Client ID:	LCSW	Batch ID:	R25737	RunNo:	25737					
Prep Date:		Analysis Date:	4/24/2015	SeqNo:	762886	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	0.52	0.020	0.5000	0	104	80	120			
Barium	0.49	0.020	0.5000	0	97.3	80	120			
Cadmium	0.50	0.0020	0.5000	0	100	80	120			
Calcium	52	1.0	50.00	0	104	80	120			
Chromium	0.49	0.0060	0.5000	0	98.0	80	120			
Copper	0.48	0.0060	0.5000	0	96.0	80	120			
Iron	0.49	0.020	0.5000	0	97.5	80	120			
Lead	0.49	0.0050	0.5000	0	98.4	80	120			
Magnesium	51	1.0	50.00	0	102	80	120			
Manganese	0.47	0.0020	0.5000	0	94.6	80	120			
Potassium	49	1.0	50.00	0	97.6	80	120			
Selenium	0.49	0.050	0.5000	0	98.7	80	120			
Silver	0.097	0.0050	0.1000	0	97.1	80	120			
Sodium	50	1.0	50.00	0	100	80	120			
Uranium	0.49	0.10	0.5000	0	97.2	80	120			
Zinc	0.50	0.020	0.5000	0	100	80	120			

Qualifiers:

* Value exceeds Maximum Contaminant Level.
E Value above quantitation range
J Analyte detected below quantitation limits
O RSD is greater than RSDlimit
R RPD outside accepted recovery limits
S Spike Recovery outside accepted recovery limits

B Analyte detected in the associated Method Blank
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
P Sample pH Not In Range
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1504A00

14-May-15

Client: Western Refining Southwest, Inc.

Project: San Juan River 4-22-15

Sample ID	MB-18885		SampType:	MBLK		TestCode:	EPA 6010B: Total Recoverable Metals			
Client ID:	PBW		Batch ID:	18885		RunNo:	25752			
Prep Date:	4/25/2015		Analysis Date:	4/26/2015		SeqNo:	763280		Units: mg/L	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	ND	0.020								
Barium	ND	0.020								
Cadmium	ND	0.0020								
Chromium	ND	0.0060								
Lead	ND	0.0050								
Selenium	ND	0.050								
Silver	ND	0.0050								

Sample ID	LCS-18885		SampType:	LCS		TestCode:	EPA 6010B: Total Recoverable Metals			
Client ID:	LCSW		Batch ID:	18885		RunNo:	25752			
Prep Date:	4/25/2015		Analysis Date:	4/26/2015		SeqNo:	763281		Units: mg/L	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	0.50	0.020	0.5000	0	99.3	80	120			
Barium	0.46	0.020	0.5000	0	93.0	80	120			
Cadmium	0.48	0.0020	0.5000	0	95.7	80	120			
Chromium	0.47	0.0060	0.5000	0	93.8	80	120			
Lead	0.47	0.0050	0.5000	0	94.4	80	120			
Selenium	0.49	0.050	0.5000	0	98.9	80	120			
Silver	0.099	0.0050	0.1000	0	99.3	80	120			

Sample ID	LCSD-18885		SampType:	LCSD		TestCode:	EPA 6010B: Total Recoverable Metals			
Client ID:	LCSS02		Batch ID:	18885		RunNo:	25752			
Prep Date:	4/25/2015		Analysis Date:	4/26/2015		SeqNo:	763282		Units: mg/L	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	0.49	0.020	0.5000	0	99.0	80	120	0.297	20	
Barium	0.47	0.020	0.5000	0	93.5	80	120	0.539	20	
Cadmium	0.48	0.0020	0.5000	0	96.0	80	120	0.380	20	
Chromium	0.47	0.0060	0.5000	0	94.9	80	120	1.13	20	
Lead	0.47	0.0050	0.5000	0	94.3	80	120	0.0657	20	
Selenium	0.49	0.050	0.5000	0	98.3	80	120	0.580	20	
Silver	0.10	0.0050	0.1000	0	100	80	120	1.06	20	

Qualifiers:

* Value exceeds Maximum Contaminant Level.
E Value above quantitation range
J Analyte detected below quantitation limits
O RSD is greater than RSDlimit
R RPD outside accepted recovery limits
S Spike Recovery outside accepted recovery limits

B Analyte detected in the associated Method Blank
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
P Sample pH Not In Range
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1504A00

14-May-15

Client: Western Refining Southwest, Inc.

Project: San Juan River 4-22-15

Sample ID	lcs-1		SampType: LCS			TestCode: SM2320B: Alkalinity				
Client ID:	LCSW		Batch ID: R25808			RunNo: 25808				
Prep Date:			Analysis Date: 4/27/2015			SeqNo: 764906		Units: mg/L CaCO3		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Alkalinity (as CaCO3)	79.00	20.00	80.00	0	98.8	90	110			

Sample ID	mb-2		SampType: MBLK			TestCode: SM2320B: Alkalinity				
Client ID:	PBW		Batch ID: R25808			RunNo: 25808				
Prep Date:			Analysis Date: 4/27/2015			SeqNo: 764907		Units: mg/L CaCO3		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Alkalinity (as CaCO3)	ND	20.00								

Qualifiers:

* Value exceeds Maximum Contaminant Level.
E Value above quantitation range
J Analyte detected below quantitation limits
O RSD is greater than RSDlimit
R RPD outside accepted recovery limits
S Spike Recovery outside accepted recovery limits

B Analyte detected in the associated Method Blank
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
P Sample pH Not In Range
RL Reporting Detection Limit

Sample Log-In Check List

Client Name: **Western Refining Southw**

Work Order Number: **1504A00**

RcptNo: **1**

Received by/date:

Logged By: **Ashley Gallegos**

4/23/2015 8:00:00 AM

Completed By: **Ashley Gallegos**

4/23/2015 9:10:09 AM

Reviewed By:

Chain of Custody

1. Custody seals intact on sample bottles? Yes ☐ No ☐ Not Present ☒
2. Is Chain of Custody complete? Yes ☒ No ☐ Not Present ☐
3. How was the sample delivered? Courier

Log In

4. Was an attempt made to cool the samples? Yes ☒ No ☐ NA ☐
5. Were all samples received at a temperature of >0° C to 6.0°C Yes ☒ No ☐ NA ☐
6. Sample(s) in proper container(s)? Yes ☒ No ☐
7. Sufficient sample volume for indicated test(s)? Yes ☒ No ☐
8. Are samples (except VOA and ONG) properly preserved? Yes ☒ No ☐
9. Was preservative added to bottles? Yes ☐ No ☒ NA ☐
10. VOA vials have zero headspace? Yes ☒ No ☐ No VOA Vials ☐
11. Were any sample containers received broken? Yes ☐ No ☒
12. Does paperwork match bottle labels?
(Note discrepancies on chain of custody) Yes ☒ No ☐ # of preserved bottles checked for pH: 12
(2 or >12 unless noted)
13. Are matrices correctly identified on Chain of Custody? Yes ☒ No ☐ Adjusted? NO
14. Is it clear what analyses were requested? Yes ☒ No ☐
15. Were all holding times able to be met?
(If no, notify customer for authorization.) Yes ☒ No ☐ Checked by: [Signature]

Special Handling (if applicable)

16. Was client notified of all discrepancies with this order? Yes ☐ No ☐ NA ☒

Person Notified:

Date

By Whom:

Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding:

Client Instructions:

17. Additional remarks:

18. Cooler Information

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	1.0	Good	Yes			

Chain-of-Custody Record

Client: Western Refining

Mailing Address: #50 CR 4990

Bloomfield, NM 87413

Phone #: 505-632-4135

email or Fax#:

QA/QC Package:

☒ Standard ☒ Level 4 (Full Validation)

Accreditation

☐ NELAP ☐ Other☐ EDD (Type)

Sampler: Bob & Matt

On Ice: ☒ Yes ☐ No

Sample Temperature: 10

Date Time Matrix Sample Request ID

4-22-15 1:00 H₂O North of 45

1-500ml Amber

1-500ml HNO₃Filtered 1-120ml HNO₃

1-500ml

1-120ml H₂SO₄

5-100ml HCl

1-500ml Amber

1-500ml HNO₃Filtered 1-120ml HNO₃

1-500ml

1-120ml H₂SO₄

Date: 4-22-15 1:30

Relinquished by: [Signature]

Received by:

Date Time

4/22/15 1428

Date: 4/23/15

Relinquished by: [Signature]

Received by:

Date Time

04/23/15 0800

HALL ENVIRONMENTAL
ANALYSIS LABORATORY

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

Tel. 505-345-3975 Fax 505-345-4107

Analysis Request

BTEX + MTBE + TMB's (8021)

BTEX + MTBE + TPH (Gas only)

TPH 8015B (GRO / 5)

TPH (Method 418.1)

EDB (Method 504.1)

PAH's (8310 or 8270 SIMS)

RCRA 8 Metals (Total)

Anions (F, Cl, NO₃, NO₂, PO₄, SO₄)

8081 Pesticides / 8082 PCB's

8260B (VOA) BTEX, MTBE only

8270 (Semi-VOA)

DRO, EXT, 8015B

Total Dissolved Metals

ALK 310.1

ANIONS 300.1

Air Bubbles (Y or N)

Remarks:



Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

May 14, 2015

Kelly Robinson

Western Refining Southwest, Inc.

#50 CR 4990

Bloomfield, NM 87413

TEL: (505) 632-4166

FAX (505) 632-3911

RE: San Juan River Bluff 4-22-15

OrderNo.: 1504A01

Dear Kelly Robinson:

Hall Environmental Analysis Laboratory received 2 sample(s) on 4/23/2015 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to www.hallenvironmental.com or the state specific web sites. In order to properly interpret your results it is imperative that you review this report in its entirety. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. When necessary, data qualifiers are provided on both the sample analysis report and the QC summary report, both sections should be reviewed. All samples are reported, as received, unless otherwise indicated. Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH and residual chlorine are qualified as being analyzed outside of the recommended holding time.

Please don't hesitate to contact HEAL for any additional information or clarifications.

ADHS Cert #AZ0682 -- NMED-DWB Cert #NM9425 -- NMED-Micro Cert #NM0190

Sincerely,

A handwritten signature in black ink, appearing to read "Andy Freeman", with a stylized flourish at the end.

Andy Freeman

Laboratory Manager

4901 Hawkins NE

Albuquerque, NM 87109

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1504A01

Date Reported: 5/14/2015

CLIENT: Western Refining Southwest, Inc.

Client Sample ID: Outfall 2

Project: San Juan River Bluff 4-22-15

Collection Date: 4/22/2015 10:30:00 AM

Lab ID: 1504A01-001

Matrix: AQUEOUS

Received Date: 4/23/2015 8:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS							Analyst: LGT
Fluoride	0.52	0.10		mg/L	1	4/24/2015 2:10:52 AM	R25726
Chloride	8.6	0.50		mg/L	1	4/24/2015 2:10:52 AM	R25726
Nitrogen, Nitrite (As N)	0.13	0.10		mg/L	1	4/24/2015 2:10:52 AM	R25726
Bromide	ND	0.10		mg/L	1	4/24/2015 2:10:52 AM	R25726
Nitrogen, Nitrate (As N)	0.71	0.10		mg/L	1	4/24/2015 2:10:52 AM	R25726
Phosphorus, Orthophosphate (As P)	ND	0.50		mg/L	1	4/24/2015 2:10:52 AM	R25726
Sulfate	88	10		mg/L	20	4/24/2015 2:23:16 AM	R25726
EPA METHOD 7470: MERCURY							Analyst: MED
Mercury	ND	0.00020		mg/L	1	4/27/2015 1:47:04 PM	18893
EPA METHOD 6010B: DISSOLVED METALS							Analyst: ELS
Arsenic	ND	0.020		mg/L	1	4/24/2015 1:50:03 PM	R25737
Barium	0.089	0.020		mg/L	1	4/24/2015 1:50:03 PM	R25737
Cadmium	ND	0.0020		mg/L	1	4/24/2015 1:50:03 PM	R25737
Calcium	100	5.0		mg/L	5	4/24/2015 1:51:46 PM	R25737
Chromium	ND	0.0060		mg/L	1	4/24/2015 1:50:03 PM	R25737
Copper	ND	0.0060		mg/L	1	4/24/2015 1:50:03 PM	R25737
Iron	ND	0.020		mg/L	1	4/24/2015 1:50:03 PM	R25737
Lead	ND	0.0050		mg/L	1	4/24/2015 1:50:03 PM	R25737
Magnesium	21	1.0		mg/L	1	4/24/2015 1:50:03 PM	R25737
Manganese	0.011	0.0020		mg/L	1	4/24/2015 1:50:03 PM	R25737
Potassium	1.4	1.0		mg/L	1	4/24/2015 1:50:03 PM	R25737
Selenium	ND	0.050		mg/L	1	4/24/2015 1:50:03 PM	R25737
Silver	ND	0.0050		mg/L	1	4/24/2015 1:50:03 PM	R25737
Sodium	57	1.0		mg/L	1	4/24/2015 1:50:03 PM	R25737
Uranium	ND	0.10		mg/L	1	4/24/2015 1:50:03 PM	R25737
Zinc	ND	0.020		mg/L	1	4/24/2015 1:50:03 PM	R25737
EPA 6010B: TOTAL RECOVERABLE METALS							Analyst: ELS
Arsenic	ND	0.020		mg/L	1	4/26/2015 12:38:01 PM	18885
Barium	0.087	0.020		mg/L	1	4/26/2015 12:38:01 PM	18885
Cadmium	ND	0.0020		mg/L	1	4/26/2015 12:38:01 PM	18885
Chromium	ND	0.0060		mg/L	1	4/26/2015 12:38:01 PM	18885
Lead	ND	0.0050		mg/L	1	4/26/2015 12:38:01 PM	18885
Selenium	ND	0.050		mg/L	1	4/26/2015 12:38:01 PM	18885
Silver	ND	0.0050		mg/L	1	4/26/2015 12:38:01 PM	18885
EPA METHOD 8260: VOLATILES SHORT LIST							Analyst: cadg
Benzene	ND	1.0		µg/L	1	4/24/2015 8:44:02 PM	R25753
Toluene	ND	1.0		µg/L	1	4/24/2015 8:44:02 PM	R25753

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank
	E Value above quantitation range	H Holding times for preparation or analysis exceeded
	J Analyte detected below quantitation limits	ND Not Detected at the Reporting Limit
	O RSD is greater than RSDlimit	P Sample pH Not In Range
	R RPD outside accepted recovery limits	RL Reporting Detection Limit
	S Spike Recovery outside accepted recovery limits	

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1504A01

Date Reported: 5/14/2015

CLIENT: Western Refining Southwest, Inc.

Client Sample ID: Outfall 2

Project: San Juan River Bluff 4-22-15

Collection Date: 4/22/2015 10:30:00 AM

Lab ID: 1504A01-001

Matrix: AQUEOUS

Received Date: 4/23/2015 8:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260: VOLATILES SHORT LIST							Analyst: cadg
Ethylbenzene	ND	1.0		µg/L	1	4/24/2015 8:44:02 PM	R25753
Methyl tert-butyl ether (MTBE)	ND	1.0		µg/L	1	4/24/2015 8:44:02 PM	R25753
Xylenes, Total	ND	1.5		µg/L	1	4/24/2015 8:44:02 PM	R25753
Surr: 1,2-Dichloroethane-d4	97.5	70-130		%REC	1	4/24/2015 8:44:02 PM	R25753
Surr: 4-Bromofluorobenzene	105	70-130		%REC	1	4/24/2015 8:44:02 PM	R25753
Surr: Dibromofluoromethane	101	70-130		%REC	1	4/24/2015 8:44:02 PM	R25753
Surr: Toluene-d8	105	70-130		%REC	1	4/24/2015 8:44:02 PM	R25753
SM2320B: ALKALINITY							Analyst: JRR
Bicarbonate (As CaCO3)	344.8	20.00		mg/L CaCO3	1	4/27/2015 4:56:59 PM	R25808
Carbonate (As CaCO3)	ND	2.000		mg/L CaCO3	1	4/27/2015 4:56:59 PM	R25808
Total Alkalinity (as CaCO3)	344.8	20.00		mg/L CaCO3	1	4/27/2015 4:56:59 PM	R25808

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank	Page 2 of 12
	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded	
	J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit	
	O	RSD is greater than RSDlimit	P	Sample pH Not In Range	
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit	
	S	Spike Recovery outside accepted recovery limits			

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1504A01

Date Reported: 5/14/2015

CLIENT: Western Refining Southwest, Inc.

Client Sample ID: Outfall 3

Project: San Juan River Bluff 4-22-15

Collection Date: 4/22/2015 11:00:00 AM

Lab ID: 1504A01-002

Matrix: AQUEOUS

Received Date: 4/23/2015 8:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS							Analyst: LGT
Fluoride	0.22	0.10		mg/L	1	4/24/2015 3:00:31 AM	R25726
Chloride	4.4	0.50		mg/L	1	4/24/2015 3:00:31 AM	R25726
Nitrogen, Nitrite (As N)	ND	0.10		mg/L	1	4/24/2015 3:00:31 AM	R25726
Bromide	ND	0.10		mg/L	1	4/24/2015 3:00:31 AM	R25726
Nitrogen, Nitrate (As N)	0.21	0.10		mg/L	1	4/24/2015 3:00:31 AM	R25726
Phosphorus, Orthophosphate (As P)	ND	0.50		mg/L	1	4/24/2015 3:00:31 AM	R25726
Sulfate	54	10		mg/L	20	4/24/2015 3:12:55 AM	R25726
EPA METHOD 7470: MERCURY							Analyst: MED
Mercury	ND	0.00020		mg/L	1	4/27/2015 1:48:51 PM	18893
EPA METHOD 6010B: DISSOLVED METALS							Analyst: ELS
Arsenic	ND	0.020		mg/L	1	4/24/2015 1:53:38 PM	R25737
Barium	0.062	0.020		mg/L	1	4/24/2015 1:53:38 PM	R25737
Cadmium	ND	0.0020		mg/L	1	4/24/2015 1:53:38 PM	R25737
Calcium	41	1.0		mg/L	1	4/24/2015 1:53:38 PM	R25737
Chromium	ND	0.0060		mg/L	1	4/24/2015 1:53:38 PM	R25737
Copper	ND	0.0060		mg/L	1	4/24/2015 1:53:38 PM	R25737
Iron	ND	0.020		mg/L	1	4/24/2015 1:53:38 PM	R25737
Lead	ND	0.0050		mg/L	1	4/24/2015 1:53:38 PM	R25737
Magnesium	7.1	1.0		mg/L	1	4/24/2015 1:53:38 PM	R25737
Manganese	ND	0.0020		mg/L	1	4/24/2015 1:53:38 PM	R25737
Potassium	1.9	1.0		mg/L	1	4/24/2015 1:53:38 PM	R25737
Selenium	ND	0.050		mg/L	1	4/24/2015 1:53:38 PM	R25737
Silver	ND	0.0050		mg/L	1	4/24/2015 1:53:38 PM	R25737
Sodium	22	1.0		mg/L	1	4/24/2015 1:53:38 PM	R25737
Uranium	ND	0.10		mg/L	1	4/24/2015 1:53:38 PM	R25737
Zinc	ND	0.020		mg/L	1	4/24/2015 1:53:38 PM	R25737
EPA 6010B: TOTAL RECOVERABLE METALS							Analyst: ELS
Arsenic	ND	0.020		mg/L	1	4/28/2015 1:45:12 PM	18885
Barium	0.063	0.020		mg/L	1	4/28/2015 1:45:12 PM	18885
Cadmium	ND	0.0020		mg/L	1	4/28/2015 1:45:12 PM	18885
Chromium	ND	0.0060		mg/L	1	4/28/2015 1:45:12 PM	18885
Lead	ND	0.0050		mg/L	1	4/26/2015 12:46:31 PM	18885
Selenium	ND	0.050		mg/L	1	4/26/2015 12:46:31 PM	18885
Silver	ND	0.0050		mg/L	1	4/28/2015 1:45:12 PM	18885
EPA METHOD 8260: VOLATILES SHORT LIST							Analyst: cadg
Benzene	ND	1.0		µg/L	1	4/24/2015 9:12:56 PM	R25753
Toluene	ND	1.0		µg/L	1	4/24/2015 9:12:56 PM	R25753

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank
	E Value above quantitation range	H Holding times for preparation or analysis exceeded
	J Analyte detected below quantitation limits	ND Not Detected at the Reporting Limit
	O RSD is greater than RSDlimit	P Sample pH Not In Range
	R RPD outside accepted recovery limits	RL Reporting Detection Limit
	S Spike Recovery outside accepted recovery limits	

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1504A01

Date Reported: 5/14/2015

CLIENT: Western Refining Southwest, Inc.

Client Sample ID: Outfall 3

Project: San Juan River Bluff 4-22-15

Collection Date: 4/22/2015 11:00:00 AM

Lab ID: 1504A01-002

Matrix: AQUEOUS

Received Date: 4/23/2015 8:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260: VOLATILES SHORT LIST							Analyst: cadg
Ethylbenzene	ND	1.0		µg/L	1	4/24/2015 9:12:56 PM	R25753
Methyl tert-butyl ether (MTBE)	ND	1.0		µg/L	1	4/24/2015 9:12:56 PM	R25753
Xylenes, Total	ND	1.5		µg/L	1	4/24/2015 9:12:56 PM	R25753
Surr: 1,2-Dichloroethane-d4	102	70-130		%REC	1	4/24/2015 9:12:56 PM	R25753
Surr: 4-Bromofluorobenzene	110	70-130		%REC	1	4/24/2015 9:12:56 PM	R25753
Surr: Dibromofluoromethane	111	70-130		%REC	1	4/24/2015 9:12:56 PM	R25753
Surr: Toluene-d8	99.0	70-130		%REC	1	4/24/2015 9:12:56 PM	R25753
SM2320B: ALKALINITY							Analyst: JRR
Bicarbonate (As CaCO3)	111.0	20.00		mg/L CaCO3	1	4/27/2015 5:12:26 PM	R25808
Carbonate (As CaCO3)	ND	2.000		mg/L CaCO3	1	4/27/2015 5:12:26 PM	R25808
Total Alkalinity (as CaCO3)	111.0	20.00		mg/L CaCO3	1	4/27/2015 5:12:26 PM	R25808

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank	Page 4 of 12
	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded	
	J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit	
	O	RSD is greater than RSDlimit	P	Sample pH Not In Range	
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit	
	S	Spike Recovery outside accepted recovery limits			

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1504A01

14-May-15

Client: Western Refining Southwest, Inc.

Project: San Juan River Bluff 4-22-15

Sample ID MB	SampType: MBLK		TestCode: EPA Method 300.0: Anions							
Client ID: PBW	Batch ID: R25726		RunNo: 25726							
Prep Date:	Analysis Date: 4/23/2015		SeqNo: 762606		Units: mg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	ND	0.10								
Chloride	ND	0.50								
Nitrogen, Nitrite (As N)	ND	0.10								
Bromide	ND	0.10								
Nitrogen, Nitrate (As N)	ND	0.10								
Phosphorus, Orthophosphate (As P)	ND	0.50								
Sulfate	ND	0.50								

Sample ID LCS	SampType: LCS		TestCode: EPA Method 300.0: Anions							
Client ID: LCSW	Batch ID: R25726		RunNo: 25726							
Prep Date:	Analysis Date: 4/23/2015		SeqNo: 762607		Units: mg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	0.49	0.10	0.5000	0	98.2	90	110			
Chloride	5.0	0.50	5.000	0	99.5	90	110			
Nitrogen, Nitrite (As N)	1.0	0.10	1.000	0	102	90	110			
Bromide	2.6	0.10	2.500	0	103	90	110			
Nitrogen, Nitrate (As N)	2.6	0.10	2.500	0	104	90	110			
Phosphorus, Orthophosphate (As P)	4.9	0.50	5.000	0	97.5	90	110			
Sulfate	10	0.50	10.00	0	100	90	110			

Sample ID MB	SampType: MBLK		TestCode: EPA Method 300.0: Anions							
Client ID: PBW	Batch ID: R25726		RunNo: 25726							
Prep Date:	Analysis Date: 4/23/2015		SeqNo: 762657		Units: mg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	ND	0.10								
Chloride	ND	0.50								
Nitrogen, Nitrite (As N)	ND	0.10								
Bromide	ND	0.10								
Nitrogen, Nitrate (As N)	ND	0.10								
Phosphorus, Orthophosphate (As P)	ND	0.50								
Sulfate	ND	0.50								

Sample ID LCS	SampType: LCS		TestCode: EPA Method 300.0: Anions							
Client ID: LCSW	Batch ID: R25726		RunNo: 25726							
Prep Date:	Analysis Date: 4/23/2015		SeqNo: 762658		Units: mg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	0.49	0.10	0.5000	0	98.6	90	110			

Qualifiers:

* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank
E Value above quantitation range	H Holding times for preparation or analysis exceeded
J Analyte detected below quantitation limits	ND Not Detected at the Reporting Limit
O RSD is greater than RSDlimit	P Sample pH Not In Range
R RPD outside accepted recovery limits	RL Reporting Detection Limit
S Spike Recovery outside accepted recovery limits	

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1504A01

14-May-15

Client: Western Refining Southwest, Inc.

Project: San Juan River Bluff 4-22-15

Sample ID	LCS		SampType: LCS		TestCode: EPA Method 300.0: Anions					
Client ID:	LCSW		Batch ID: R25726		RunNo: 25726					
Prep Date:			Analysis Date: 4/23/2015		SeqNo: 762658		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	4.7	0.50	5.000	0	94.0	90	110			
Nitrogen, Nitrite (As N)	0.97	0.10	1.000	0	96.7	90	110			
Bromide	2.4	0.10	2.500	0	95.9	90	110			
Nitrogen, Nitrate (As N)	2.4	0.10	2.500	0	97.9	90	110			
Phosphorus, Orthophosphate (As P	4.7	0.50	5.000	0	93.9	90	110			
Sulfate	9.4	0.50	10.00	0	93.8	90	110			

Qualifiers:

* Value exceeds Maximum Contaminant Level.
E Value above quantitation range
J Analyte detected below quantitation limits
O RSD is greater than RSDlimit
R RPD outside accepted recovery limits
S Spike Recovery outside accepted recovery limits

B Analyte detected in the associated Method Blank
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
P Sample pH Not In Range
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1504A01

14-May-15

Client: Western Refining Southwest, Inc.

Project: San Juan River Bluff 4-22-15

Sample ID	5mL rb	SampType:	MBLK	TestCode:	EPA Method 8260: Volatiles Short List					
Client ID:	PBW	Batch ID:	R25753	RunNo:	25753					
Prep Date:		Analysis Date:	4/24/2015	SeqNo:	763372	Units:	µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	1.0								
Toluene	ND	1.0								
Ethylbenzene	ND	1.0								
Methyl tert-butyl ether (MTBE)	ND	1.0								
Xylenes, Total	ND	1.5								
Surr: 1,2-Dichloroethane-d4	10		10.00		103	70	130			
Surr: 4-Bromofluorobenzene	11		10.00		107	70	130			
Surr: Dibromofluoromethane	11		10.00		106	70	130			
Surr: Toluene-d8	11		10.00		106	70	130			

Sample ID	100ng lcs	SampType:	LCS	TestCode:	EPA Method 8260: Volatiles Short List					
Client ID:	LCSW	Batch ID:	R25753	RunNo:	25753					
Prep Date:		Analysis Date:	4/24/2015	SeqNo:	763373	Units:	µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	21	1.0	20.00	0	104	70	130			
Toluene	19	1.0	20.00	0	96.5	70	130			
Surr: 1,2-Dichloroethane-d4	9.8		10.00		97.8	70	130			
Surr: 4-Bromofluorobenzene	11		10.00		109	70	130			
Surr: Dibromofluoromethane	10		10.00		101	70	130			
Surr: Toluene-d8	10		10.00		101	70	130			

Qualifiers:

* Value exceeds Maximum Contaminant Level.
E Value above quantitation range
J Analyte detected below quantitation limits
O RSD is greater than RSDlimit
R RPD outside accepted recovery limits
S Spike Recovery outside accepted recovery limits

B Analyte detected in the associated Method Blank
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
P Sample pH Not In Range
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1504A01

14-May-15

Client: Western Refining Southwest, Inc.

Project: San Juan River Bluff 4-22-15

Sample ID	MB-18893		SampType:	MBLK		TestCode:	EPA Method 7470: Mercury				
Client ID:	PBW		Batch ID:	18893		RunNo:	25786				
Prep Date:	4/27/2015		Analysis Date:	4/27/2015		SeqNo:	764210		Units: mg/L		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Mercury	ND	0.00020									

Sample ID	LCS-18893		SampType: LCS		TestCode: EPA Method 7470: Mercury					
Client ID:	LCSW		Batch ID: 18893		RunNo: 25786					
Prep Date:	4/27/2015		Analysis Date: 4/27/2015		SeqNo: 764211		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.0052	0.00020	0.005000	0	103	80	120			

Qualifiers:

* Value exceeds Maximum Contaminant Level.
E Value above quantitation range
J Analyte detected below quantitation limits
O RSD is greater than RSDlimit
R RPD outside accepted recovery limits
S Spike Recovery outside accepted recovery limits

B Analyte detected in the associated Method Blank
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
P Sample pH Not In Range
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1504A01

14-May-15

Client: Western Refining Southwest, Inc.

Project: San Juan River Bluff 4-22-15

Sample ID MB	SampType: MBLK			TestCode: EPA Method 6010B: Dissolved Metals						
Client ID: PBW	Batch ID: R25737			RunNo: 25737						
Prep Date:	Analysis Date: 4/24/2015			SeqNo: 762885		Units: mg/L				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	ND	0.020								
Barium	ND	0.020								
Cadmium	ND	0.0020								
Calcium	ND	1.0								
Chromium	ND	0.0060								
Copper	ND	0.0060								
Iron	ND	0.020								
Lead	ND	0.0050								
Magnesium	ND	1.0								
Manganese	ND	0.0020								
Potassium	ND	1.0								
Selenium	ND	0.050								
Silver	ND	0.0050								
Sodium	ND	1.0								
Uranium	ND	0.10								
Zinc	ND	0.020								

Sample ID LCS	SampType: LCS			TestCode: EPA Method 6010B: Dissolved Metals						
Client ID: LCSW	Batch ID: R25737			RunNo: 25737						
Prep Date:	Analysis Date: 4/24/2015			SeqNo: 762886		Units: mg/L				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	0.52	0.020	0.5000	0	104	80	120			
Barium	0.49	0.020	0.5000	0	97.3	80	120			
Cadmium	0.50	0.0020	0.5000	0	100	80	120			
Calcium	52	1.0	50.00	0	104	80	120			
Chromium	0.49	0.0060	0.5000	0	98.0	80	120			
Copper	0.48	0.0060	0.5000	0	96.0	80	120			
Iron	0.49	0.020	0.5000	0	97.5	80	120			
Lead	0.49	0.0050	0.5000	0	98.4	80	120			
Magnesium	51	1.0	50.00	0	102	80	120			
Manganese	0.47	0.0020	0.5000	0	94.6	80	120			
Potassium	49	1.0	50.00	0	97.6	80	120			
Selenium	0.49	0.050	0.5000	0	98.7	80	120			
Silver	0.097	0.0050	0.1000	0	97.1	80	120			
Sodium	50	1.0	50.00	0	100	80	120			
Uranium	0.49	0.10	0.5000	0	97.2	80	120			
Zinc	0.50	0.020	0.5000	0	100	80	120			

Qualifiers:

* Value exceeds Maximum Contaminant Level.
 E Value above quantitation range
 J Analyte detected below quantitation limits
 O RSD is greater than RSDlimit
 R RPD outside accepted recovery limits
 S Spike Recovery outside accepted recovery limits

B Analyte detected in the associated Method Blank
 H Holding times for preparation or analysis exceeded
 ND Not Detected at the Reporting Limit
 P Sample pH Not In Range
 RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1504A01

14-May-15

Client: Western Refining Southwest, Inc.

Project: San Juan River Bluff 4-22-15

Sample ID	1504A01-002DMS		SampType: MS		TestCode: EPA Method 6010B: Dissolved Metals					
Client ID:	Outfall 3		Batch ID: R25737		RunNo: 25737					
Prep Date:			Analysis Date: 4/24/2015		SeqNo: 762903		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	0.55	0.020	0.5000	0	110	75	125			
Barium	0.55	0.020	0.5000	0.06246	98.0	75	125			
Cadmium	0.51	0.0020	0.5000	0	102	75	125			
Calcium	91	1.0	50.00	41.38	100	75	125			
Chromium	0.50	0.0060	0.5000	0	99.6	75	125			
Copper	0.48	0.0060	0.5000	0	95.9	75	125			
Iron	0.49	0.020	0.5000	0	97.8	75	125			
Lead	0.50	0.0050	0.5000	0	99.4	75	125			
Magnesium	58	1.0	50.00	7.115	101	75	125			
Manganese	0.48	0.0020	0.5000	0.001830	96.6	75	125			
Potassium	51	1.0	50.00	1.926	98.1	75	125			
Selenium	0.54	0.050	0.5000	0	108	75	125			
Silver	0.098	0.0050	0.1000	0	98.5	75	125			
Sodium	72	1.0	50.00	22.34	98.8	75	125			
Uranium	0.48	0.10	0.5000	0	96.2	75	125			
Zinc	0.52	0.020	0.5000	0.01470	101	75	125			

Sample ID	1504A01-002DMSD		SampType: MSD		TestCode: EPA Method 6010B: Dissolved Metals					
Client ID:	Outfall 3		Batch ID: R25737		RunNo: 25737					
Prep Date:			Analysis Date: 4/24/2015		SeqNo: 762904		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	0.54	0.020	0.5000	0	109	75	125	1.09	20	
Barium	0.54	0.020	0.5000	0.06246	96.4	75	125	1.47	20	
Cadmium	0.50	0.0020	0.5000	0	99.8	75	125	2.33	20	
Calcium	90	1.0	50.00	41.38	97.2	75	125	1.54	20	
Chromium	0.49	0.0060	0.5000	0	97.3	75	125	2.27	20	
Copper	0.47	0.0060	0.5000	0	93.5	75	125	2.57	20	
Iron	0.48	0.020	0.5000	0	96.8	75	125	1.09	20	
Lead	0.49	0.0050	0.5000	0	97.3	75	125	2.14	20	
Magnesium	57	1.0	50.00	7.115	99.0	75	125	2.17	20	
Manganese	0.48	0.0020	0.5000	0.001830	94.7	75	125	1.98	20	
Potassium	50	1.0	50.00	1.926	95.9	75	125	2.24	20	
Selenium	0.52	0.050	0.5000	0	104	75	125	4.00	20	
Silver	0.096	0.0050	0.1000	0	96.3	75	125	2.21	20	
Sodium	70	1.0	50.00	22.34	96.1	75	125	1.89	20	
Uranium	0.46	0.10	0.5000	0	92.7	75	125	3.66	20	
Zinc	0.51	0.020	0.5000	0.01470	100	75	125	1.10	20	

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- O RSD is greater than RSDlimit
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- P Sample pH Not In Range
- RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1504A01

14-May-15

Client: Western Refining Southwest, Inc.

Project: San Juan River Bluff 4-22-15

Sample ID	MB-18885		SampType:	MBLK		TestCode:	EPA 6010B: Total Recoverable Metals			
Client ID:	PBW		Batch ID:	18885		RunNo:	25752			
Prep Date:	4/25/2015		Analysis Date:	4/26/2015		SeqNo:	763280		Units: mg/L	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	ND	0.020								
Barium	ND	0.020								
Cadmium	ND	0.0020								
Chromium	ND	0.0060								
Lead	ND	0.0050								
Selenium	ND	0.050								
Silver	ND	0.0050								

Sample ID	LCS-18885		SampType:	LCS		TestCode:	EPA 6010B: Total Recoverable Metals			
Client ID:	LCSW		Batch ID:	18885		RunNo:	25752			
Prep Date:	4/25/2015		Analysis Date:	4/26/2015		SeqNo:	763281		Units: mg/L	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	0.50	0.020	0.5000	0	99.3	80	120			
Barium	0.46	0.020	0.5000	0	93.0	80	120			
Cadmium	0.48	0.0020	0.5000	0	95.7	80	120			
Chromium	0.47	0.0060	0.5000	0	93.8	80	120			
Lead	0.47	0.0050	0.5000	0	94.4	80	120			
Selenium	0.49	0.050	0.5000	0	98.9	80	120			
Silver	0.099	0.0050	0.1000	0	99.3	80	120			

Sample ID	LCSD-18885		SampType:	LCSD		TestCode:	EPA 6010B: Total Recoverable Metals			
Client ID:	LCSS02		Batch ID:	18885		RunNo:	25752			
Prep Date:	4/25/2015		Analysis Date:	4/26/2015		SeqNo:	763282		Units: mg/L	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	0.49	0.020	0.5000	0	99.0	80	120	0.297	20	
Barium	0.47	0.020	0.5000	0	93.5	80	120	0.539	20	
Cadmium	0.48	0.0020	0.5000	0	96.0	80	120	0.380	20	
Chromium	0.47	0.0060	0.5000	0	94.9	80	120	1.13	20	
Lead	0.47	0.0050	0.5000	0	94.3	80	120	0.0657	20	
Selenium	0.49	0.050	0.5000	0	98.3	80	120	0.580	20	
Silver	0.10	0.0050	0.1000	0	100	80	120	1.06	20	

Qualifiers:

* Value exceeds Maximum Contaminant Level.
E Value above quantitation range
J Analyte detected below quantitation limits
O RSD is greater than RSDlimit
R RPD outside accepted recovery limits
S Spike Recovery outside accepted recovery limits

B Analyte detected in the associated Method Blank
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
P Sample pH Not In Range
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1504A01

14-May-15

Client: Western Refining Southwest, Inc.

Project: San Juan River Bluff 4-22-15

Sample ID	lcs-1		SampType: LCS			TestCode: SM2320B: Alkalinity				
Client ID:	LCSW		Batch ID: R25808			RunNo: 25808				
Prep Date:			Analysis Date: 4/27/2015			SeqNo: 764906		Units: mg/L CaCO3		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Alkalinity (as CaCO3)	79.00	20.00	80.00	0	98.8	90	110			

Sample ID	mb-2		SampType: MBLK			TestCode: SM2320B: Alkalinity				
Client ID:	PBW		Batch ID: R25808			RunNo: 25808				
Prep Date:			Analysis Date: 4/27/2015			SeqNo: 764907		Units: mg/L CaCO3		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Alkalinity (as CaCO3)	ND	20.00								

Qualifiers:

* Value exceeds Maximum Contaminant Level.
E Value above quantitation range
J Analyte detected below quantitation limits
O RSD is greater than RSDlimit
R RPD outside accepted recovery limits
S Spike Recovery outside accepted recovery limits

B Analyte detected in the associated Method Blank
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
P Sample pH Not In Range
RL Reporting Detection Limit



Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

Sample Log-In Check List

Client Name: Western Refining Southw

Work Order Number: 1504A01

RcptNo: 1

Received by/date:

Logged By: Ashley Gallegos

4/23/2015 8:00:00 AM

Completed By: Ashley Gallegos

4/23/2015 9:22:29 AM

Reviewed By:

Chain of Custody

1. Custody seals intact on sample bottles?

Yes ☐

No ☐

Not Present ☒

2. Is Chain of Custody complete?

Yes ☒

No ☐

Not Present ☐

3. How was the sample delivered?

Courier

Log In

4. Was an attempt made to cool the samples?

Yes ☒

No ☐

NA ☐

5. Were all samples received at a temperature of >0° C to 6.0° C

Yes ☒

No ☐

NA ☐

6. Sample(s) in proper container(s)?

Yes ☒

No ☐

7. Sufficient sample volume for indicated test(s)?

Yes ☒

No ☐

8. Are samples (except VOA and ONG) properly preserved?

Yes ☒

No ☐

9. Was preservative added to bottles?

Yes ☐

No ☒

NA ☐

10. VOA vials have zero headspace?

Yes ☒

No ☐

No VOA Vials ☐

11. Were any sample containers received broken?

Yes ☐

No ☒

12. Does paperwork match bottle labels?

Yes ☒

No ☐

(Note discrepancies on chain of custody)

13. Are matrices correctly identified on Chain of Custody?

Yes ☒

No ☐

14. Is it clear what analyses were requested?

Yes ☒

No ☐

15. Were all holding times able to be met?

Yes ☒

No ☐

(If no, notify customer for authorization.)

of preserved
bottles checked
for pH:

Adjusted?

Checked by:

Special Handling (if applicable)

16. Was client notified of all discrepancies with this order?

Yes ☐

No ☐

NA ☒

Person Notified:

Date

By Whom:

Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding:

Client Instructions:

17. Additional remarks:

18. Cooler Information

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	1.0	Good	Yes			



Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

May 13, 2015

Kelly Robinson

Western Refining Southwest, Inc.

#50 CR 4990

Bloomfield, NM 87413

TEL: (505) 632-4166

FAX (505) 632-3911

RE: San Juan River Bluff Seeps 4-22-15

OrderNo.: 1504A02

Dear Kelly Robinson:

Hall Environmental Analysis Laboratory received 3 sample(s) on 4/23/2015 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to www.hallenvironmental.com or the state specific web sites. In order to properly interpret your results it is imperative that you review this report in its entirety. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. When necessary, data qualifiers are provided on both the sample analysis report and the QC summary report, both sections should be reviewed. All samples are reported, as received, unless otherwise indicated. Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH and residual chlorine are qualified as being analyzed outside of the recommended holding time.

Please don't hesitate to contact HEAL for any additional information or clarifications.

ADHS Cert #AZ0682 -- NMED-DWB Cert #NM9425 -- NMED-Micro Cert #NM0190

Sincerely,

A handwritten signature in black ink, appearing to read "Andy Freeman", with a stylized flourish at the end.

Andy Freeman

Laboratory Manager

4901 Hawkins NE

Albuquerque, NM 87109

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1504A02

Date Reported: 5/13/2015

CLIENT: Western Refining Southwest, Inc.

Client Sample ID: Seep #1

Project: San Juan River Bluff Seeps 4-22-15

Collection Date: 4/22/2015 10:00:00 AM

Lab ID: 1504A02-001

Matrix: AQUEOUS

Received Date: 4/23/2015 8:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS							Analyst: LGT
Fluoride	ND	1.0		mg/L	10	4/23/2015 4:33:22 PM	R25717
Chloride	170	50		mg/L	100	4/23/2015 4:45:47 PM	R25717
Nitrogen, Nitrite (As N)	ND	1.0		mg/L	10	4/23/2015 4:33:22 PM	R25717
Bromide	3.3	1.0		mg/L	10	4/23/2015 4:33:22 PM	R25717
Nitrogen, Nitrate (As N)	ND	1.0		mg/L	10	4/23/2015 4:33:22 PM	R25717
Phosphorus, Orthophosphate (As P')	ND	5.0		mg/L	10	4/23/2015 4:33:22 PM	R25717
Sulfate	1200	50	*	mg/L	100	4/23/2015 4:45:47 PM	R25717
EPA METHOD 8260: VOLATILES SHORT LIST							Analyst: DJF
Benzene	ND	1.0		µg/L	1	4/29/2015 7:05:39 AM	R25818
Toluene	ND	1.0		µg/L	1	4/29/2015 7:05:39 AM	R25818
Ethylbenzene	ND	1.0		µg/L	1	4/29/2015 7:05:39 AM	R25818
Methyl tert-butyl ether (MTBE)	13	1.0		µg/L	1	4/29/2015 7:05:39 AM	R25818
Xylenes, Total	ND	1.5		µg/L	1	4/29/2015 7:05:39 AM	R25818
Surr: 1,2-Dichloroethane-d4	110	70-130		%REC	1	4/29/2015 7:05:39 AM	R25818
Surr: 4-Bromofluorobenzene	98.8	70-130		%REC	1	4/29/2015 7:05:39 AM	R25818
Surr: Dibromofluoromethane	105	70-130		%REC	1	4/29/2015 7:05:39 AM	R25818
Surr: Toluene-d8	98.4	70-130		%REC	1	4/29/2015 7:05:39 AM	R25818
CARBON DIOXIDE							Analyst: JRR
Total Carbon Dioxide	390	1.0	H	mg CO2/L	1	4/27/2015 5:21:06 PM	R25808
SM2320B: ALKALINITY							Analyst: JRR
Bicarbonate (As CaCO3)	433.1	20.00		mg/L CaCO3	1	4/27/2015 5:21:06 PM	R25808
Carbonate (As CaCO3)	ND	2.000		mg/L CaCO3	1	4/27/2015 5:21:06 PM	R25808
Total Alkalinity (as CaCO3)	433.1	20.00		mg/L CaCO3	1	4/27/2015 5:21:06 PM	R25808

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank	Page 1 of 7
	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded	
	J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit	
	O	RSD is greater than RSDlimit	P	Sample pH Not In Range	
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit	
	S	Spike Recovery outside accepted recovery limits			

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1504A02

Date Reported: 5/13/2015

CLIENT: Western Refining Southwest, Inc.

Client Sample ID: Seep #1 Dup

Project: San Juan River Bluff Seeps 4-22-15

Collection Date: 4/22/2015 10:00:00 AM

Lab ID: 1504A02-002

Matrix: AQUEOUS

Received Date: 4/23/2015 8:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS							Analyst: LGT
Fluoride	ND	1.0		mg/L	10	4/23/2015 4:58:11 PM	R25717
Chloride	170	50		mg/L	100	4/23/2015 5:10:36 PM	R25717
Nitrogen, Nitrite (As N)	ND	1.0		mg/L	10	4/23/2015 4:58:11 PM	R25717
Bromide	3.3	1.0		mg/L	10	4/23/2015 4:58:11 PM	R25717
Nitrogen, Nitrate (As N)	ND	1.0		mg/L	10	4/23/2015 4:58:11 PM	R25717
Phosphorus, Orthophosphate (As P')	ND	5.0		mg/L	10	4/23/2015 4:58:11 PM	R25717
Sulfate	1100	50	*	mg/L	100	4/23/2015 5:10:36 PM	R25717
EPA METHOD 8260: VOLATILES SHORT LIST							Analyst: DJF
Benzene	ND	1.0		µg/L	1	4/29/2015 7:33:07 AM	R25818
Toluene	ND	1.0		µg/L	1	4/29/2015 7:33:07 AM	R25818
Ethylbenzene	ND	1.0		µg/L	1	4/29/2015 7:33:07 AM	R25818
Methyl tert-butyl ether (MTBE)	12	1.0		µg/L	1	4/29/2015 7:33:07 AM	R25818
Xylenes, Total	ND	1.5		µg/L	1	4/29/2015 7:33:07 AM	R25818
Surr: 1,2-Dichloroethane-d4	100	70-130		%REC	1	4/29/2015 7:33:07 AM	R25818
Surr: 4-Bromofluorobenzene	93.0	70-130		%REC	1	4/29/2015 7:33:07 AM	R25818
Surr: Dibromofluoromethane	101	70-130		%REC	1	4/29/2015 7:33:07 AM	R25818
Surr: Toluene-d8	95.8	70-130		%REC	1	4/29/2015 7:33:07 AM	R25818
CARBON DIOXIDE							Analyst: JRR
Total Carbon Dioxide	390	1.0	H	mg CO2/L	1	4/27/2015 5:39:15 PM	R25808
SM2320B: ALKALINITY							Analyst: JRR
Bicarbonate (As CaCO3)	429.2	20.00		mg/L CaCO3	1	4/27/2015 5:39:15 PM	R25808
Carbonate (As CaCO3)	ND	2.000		mg/L CaCO3	1	4/27/2015 5:39:15 PM	R25808
Total Alkalinity (as CaCO3)	429.2	20.00		mg/L CaCO3	1	4/27/2015 5:39:15 PM	R25808

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank	Page 2 of 7
	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded	
	J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit	
	O	RSD is greater than RSDlimit	P	Sample pH Not In Range	
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit	
	S	Spike Recovery outside accepted recovery limits			

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1504A02

Date Reported: 5/13/2015

CLIENT: Western Refining Southwest, Inc.

Client Sample ID: TRIP BLANK

Project: San Juan River Bluff Seeps 4-22-15

Collection Date:

Lab ID: 1504A02-003

Matrix: TRIP BLANK

Received Date: 4/23/2015 8:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260: VOLATILES SHORT LIST						Analyst: DJF	
Benzene	ND	1.0		µg/L	1	4/29/2015 8:00:40 AM	R25818
Toluene	ND	1.0		µg/L	1	4/29/2015 8:00:40 AM	R25818
Ethylbenzene	ND	1.0		µg/L	1	4/29/2015 8:00:40 AM	R25818
Methyl tert-butyl ether (MTBE)	ND	1.0		µg/L	1	4/29/2015 8:00:40 AM	R25818
Xylenes, Total	ND	1.5		µg/L	1	4/29/2015 8:00:40 AM	R25818
Surr: 1,2-Dichloroethane-d4	96.2	70-130		%REC	1	4/29/2015 8:00:40 AM	R25818
Surr: 4-Bromofluorobenzene	101	70-130		%REC	1	4/29/2015 8:00:40 AM	R25818
Surr: Dibromofluoromethane	97.1	70-130		%REC	1	4/29/2015 8:00:40 AM	R25818
Surr: Toluene-d8	97.2	70-130		%REC	1	4/29/2015 8:00:40 AM	R25818

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
	J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
	O	RSD is greater than RSDlimit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	Spike Recovery outside accepted recovery limits		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1504A02

13-May-15

Client: Western Refining Southwest, Inc.
Project: San Juan River Bluff Seeps 4-22-15

Sample ID MB	SampType: MBLK		TestCode: EPA Method 300.0: Anions							
Client ID: PBW	Batch ID: R25717		RunNo: 25717							
Prep Date:	Analysis Date: 4/23/2015		SeqNo: 762345		Units: mg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	ND	0.100								
Chloride	ND	0.500								
Nitrogen, Nitrite (As N)	ND	0.100								
Bromide	ND	0.100								
Nitrogen, Nitrate (As N)	ND	0.100								
Phosphorus, Orthophosphate (As P)	ND	0.500								
Sulfate	ND	0.500								

Sample ID LCS	SampType: LCS		TestCode: EPA Method 300.0: Anions							
Client ID: LCSW	Batch ID: R25717		RunNo: 25717							
Prep Date:	Analysis Date: 4/23/2015		SeqNo: 762346		Units: mg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	0.496	0.100	0.5000	0	99.2	90	110			
Chloride	4.75	0.500	5.000	0	94.9	90	110			
Nitrogen, Nitrite (As N)	0.969	0.100	1.000	0	96.9	90	110			
Bromide	2.50	0.100	2.500	0	99.9	90	110			
Nitrogen, Nitrate (As N)	2.51	0.100	2.500	0	100	90	110			
Phosphorus, Orthophosphate (As P)	4.76	0.500	5.000	0	95.2	90	110			
Sulfate	9.77	0.500	10.00	0	97.7	90	110			

Sample ID MB	SampType: MBLK		TestCode: EPA Method 300.0: Anions							
Client ID: PBW	Batch ID: R25717		RunNo: 25717							
Prep Date:	Analysis Date: 4/24/2015		SeqNo: 762399		Units: mg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	ND	0.100								
Chloride	ND	0.500								
Nitrogen, Nitrite (As N)	ND	0.100								
Bromide	ND	0.100								
Nitrogen, Nitrate (As N)	ND	0.100								
Phosphorus, Orthophosphate (As P)	ND	0.500								
Sulfate	ND	0.500								

Sample ID LCS	SampType: LCS		TestCode: EPA Method 300.0: Anions							
Client ID: LCSW	Batch ID: R25717		RunNo: 25717							
Prep Date:	Analysis Date: 4/24/2015		SeqNo: 762400		Units: mg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	0.508	0.100	0.5000	0	102	90	110			

Qualifiers:

* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank
E Value above quantitation range	H Holding times for preparation or analysis exceeded
J Analyte detected below quantitation limits	ND Not Detected at the Reporting Limit
O RSD is greater than RSDlimit	P Sample pH Not In Range
R RPD outside accepted recovery limits	RL Reporting Detection Limit
S Spike Recovery outside accepted recovery limits	

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1504A02

13-May-15

Client: Western Refining Southwest, Inc.
Project: San Juan River Bluff Seeps 4-22-15

Sample ID	LCS		SampType: LCS		TestCode: EPA Method 300.0: Anions						
Client ID:	LCSW		Batch ID: R25717		RunNo: 25717						
Prep Date:			Analysis Date: 4/24/2015		SeqNo: 762400		Units: mg/L				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Chloride	4.74	0.500	5.000	0	94.8	90	110				
Nitrogen, Nitrite (As N)	0.968	0.100	1.000	0	96.9	90	110				
Bromide	2.48	0.100	2.500	0	99.0	90	110				
Nitrogen, Nitrate (As N)	2.51	0.100	2.500	0	100	90	110				
Phosphorus, Orthophosphate (As P	4.86	0.500	5.000	0	97.2	90	110				
Sulfate	9.75	0.500	10.00	0	97.5	90	110				

Qualifiers:

* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank
E Value above quantitation range	H Holding times for preparation or analysis exceeded
J Analyte detected below quantitation limits	ND Not Detected at the Reporting Limit
O RSD is greater than RSDlimit	P Sample pH Not In Range
R RPD outside accepted recovery limits	RL Reporting Detection Limit
S Spike Recovery outside accepted recovery limits	

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1504A02

13-May-15

Client: Western Refining Southwest, Inc.
Project: San Juan River Bluff Seeps 4-22-15

Sample ID	5ml rb	SampType:	MBLK	TestCode:	EPA Method 8260: Volatiles Short List					
Client ID:	PBW	Batch ID:	R25818	RunNo:	25818					
Prep Date:		Analysis Date:	4/28/2015	SeqNo:	765184	Units:	µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	1.0								
Toluene	ND	1.0								
Ethylbenzene	ND	1.0								
Methyl tert-butyl ether (MTBE)	ND	1.0								
Xylenes, Total	ND	1.5								
Surr: 1,2-Dichloroethane-d4	9.7		10.00		97.4	70	130			
Surr: 4-Bromofluorobenzene	9.6		10.00		95.9	70	130			
Surr: Dibromofluoromethane	10		10.00		101	70	130			
Surr: Toluene-d8	10		10.00		99.8	70	130			

Sample ID	100nglcs200T2lcs	SampType:	LCS	TestCode:	EPA Method 8260: Volatiles Short List					
Client ID:	LCSW	Batch ID:	R25818	RunNo:	25818					
Prep Date:		Analysis Date:	4/28/2015	SeqNo:	765185	Units:	µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	21	1.0	20.00	0	107	70	130			
Toluene	19	1.0	20.00	0	97.4	70	130			
Surr: 1,2-Dichloroethane-d4	9.9		10.00		98.9	70	130			
Surr: 4-Bromofluorobenzene	9.4		10.00		94.3	70	130			
Surr: Dibromofluoromethane	9.3		10.00		93.3	70	130			
Surr: Toluene-d8	10		10.00		100	70	130			

Qualifiers:

* Value exceeds Maximum Contaminant Level.
E Value above quantitation range
J Analyte detected below quantitation limits
O RSD is greater than RSDlimit
R RPD outside accepted recovery limits
S Spike Recovery outside accepted recovery limits

B Analyte detected in the associated Method Blank
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
P Sample pH Not In Range
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1504A02

13-May-15

Client: Western Refining Southwest, Inc.
Project: San Juan River Bluff Seeps 4-22-15

Sample ID	lcs-1		SampType: LCS			TestCode: SM2320B: Alkalinity				
Client ID:	LCSW		Batch ID: R25808			RunNo: 25808				
Prep Date:			Analysis Date: 4/27/2015			SeqNo: 764906		Units: mg/L CaCO3		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Alkalinity (as CaCO3)	79.00	20.00	80.00	0	98.8	90	110			

Sample ID	mb-2		SampType: MBLK			TestCode: SM2320B: Alkalinity				
Client ID:	PBW		Batch ID: R25808			RunNo: 25808				
Prep Date:			Analysis Date: 4/27/2015			SeqNo: 764907		Units: mg/L CaCO3		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Alkalinity (as CaCO3)	ND	20.00								

Qualifiers:

* Value exceeds Maximum Contaminant Level.
E Value above quantitation range
J Analyte detected below quantitation limits
O RSD is greater than RSDlimit
R RPD outside accepted recovery limits
S Spike Recovery outside accepted recovery limits

B Analyte detected in the associated Method Blank
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
P Sample pH Not In Range
RL Reporting Detection Limit



Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

Sample Log-In Check List

Client Name: Western Refining Southw

Work Order Number: 1504A02

RcptNo: 1

Received by/date:

Logged By: Ashley Gallegos

4/23/2015 8:00:00 AM

Completed By: Ashley Gallegos

4/23/2015 3:41:55 PM

Reviewed By:

Chain of Custody

1. Custody seals intact on sample bottles? Yes ☐ No ☐ Not Present ☒
2. Is Chain of Custody complete? Yes ☒ No ☐ Not Present ☐
3. How was the sample delivered? Courier

Log In

4. Was an attempt made to cool the samples? Yes ☒ No ☐ NA ☐
5. Were all samples received at a temperature of $>0^{\circ}\text{C}$ to 6.0°C ? Yes ☒ No ☐ NA ☐
6. Sample(s) in proper container(s)? Yes ☒ No ☐
7. Sufficient sample volume for indicated test(s)? Yes ☒ No ☐
8. Are samples (except VOA and ONG) properly preserved? Yes ☒ No ☐
9. Was preservative added to bottles? Yes ☐ No ☒ NA ☐
10. VOA vials have zero headspace? Yes ☒ No ☐ No VOA Vials ☐
11. Were any sample containers received broken? Yes ☐ No ☒
12. Does paperwork match bottle labels?
(Note discrepancies on chain of custody) Yes ☒ No ☐
13. Are matrices correctly identified on Chain of Custody? Yes ☒ No ☐
14. Is it clear what analyses were requested? Yes ☒ No ☐
15. Were all holding times able to be met?
(If no, notify customer for authorization.) Yes ☒ No ☐
- # of preserved bottles checked for pH: 02 (<2 or >12 unless noted)
Adjusted? NO
Checked by: AG

Special Handling (if applicable)

16. Was client notified of all discrepancies with this order? Yes ☐ No ☐ NA ☒

Person Notified:

Date

By Whom:

Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding:

Client Instructions:

17. Additional remarks:

18. Cooler Information

Cooler No	Temp $^{\circ}\text{C}$	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	1.0	Good	Yes			



Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

September 15, 2015

Kelly Robinson

Western Refining Southwest, Inc.

#50 CR 4990

Bloomfield, NM 87413

TEL: (505) 632-4166

FAX (505) 632-3911

RE: RCRA Wells 8-18-15

OrderNo.: 1508875

Dear Kelly Robinson:

Hall Environmental Analysis Laboratory received 14 sample(s) on 8/19/2015 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to www.hallenvironmental.com or the state specific web sites. In order to properly interpret your results it is imperative that you review this report in its entirety. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. When necessary, data qualifiers are provided on both the sample analysis report and the QC summary report, both sections should be reviewed. All samples are reported, as received, unless otherwise indicated. Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH and residual chlorine are qualified as being analyzed outside of the recommended holding time.

Please don't hesitate to contact HEAL for any additional information or clarifications.

ADHS Cert #AZ0682 -- NMED-DWB Cert #NM9425 -- NMED-Micro Cert #NM0190

Sincerely,

A handwritten signature in black ink, appearing to read "Andy Freeman", is written over a horizontal line.

Andy Freeman

Laboratory Manager

4901 Hawkins NE

Albuquerque, NM 87109

Analytical Report

Lab Order: 1508875

Hall Environmental Analysis Laboratory, Inc.

Date Reported: 9/15/2015

CLIENT: Western Refining Southwest, Inc.
Project: RCRA Wells 8-18-15
Lab ID: 1508875-001A

Client Sample ID: MW-51
Collection Date: 8/18/2015 7:50:00 AM
Matrix: Aqueous

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES				Analyst: DJF			
Benzene	ND	1.0		µg/L	1	8/20/2015 1:57:15 PM	R28360
Toluene	ND	1.0		µg/L	1	8/20/2015 1:57:15 PM	R28360
Ethylbenzene	ND	1.0		µg/L	1	8/20/2015 1:57:15 PM	R28360
Methyl tert-butyl ether (MTBE)	ND	1.0		µg/L	1	8/20/2015 1:57:15 PM	R28360
1,2,4-Trimethylbenzene	ND	1.0		µg/L	1	8/20/2015 1:57:15 PM	R28360
1,3,5-Trimethylbenzene	ND	1.0		µg/L	1	8/20/2015 1:57:15 PM	R28360
1,2-Dichloroethane (EDC)	ND	1.0		µg/L	1	8/20/2015 1:57:15 PM	R28360
1,2-Dibromoethane (EDB)	ND	1.0		µg/L	1	8/20/2015 1:57:15 PM	R28360
Naphthalene	ND	2.0		µg/L	1	8/20/2015 1:57:15 PM	R28360
1-Methylnaphthalene	ND	4.0		µg/L	1	8/20/2015 1:57:15 PM	R28360
2-Methylnaphthalene	ND	4.0		µg/L	1	8/20/2015 1:57:15 PM	R28360
Acetone	ND	10		µg/L	1	8/20/2015 1:57:15 PM	R28360
Bromobenzene	ND	1.0		µg/L	1	8/20/2015 1:57:15 PM	R28360
Bromodichloromethane	ND	1.0		µg/L	1	8/20/2015 1:57:15 PM	R28360
Bromoform	ND	1.0		µg/L	1	8/20/2015 1:57:15 PM	R28360
Bromomethane	ND	3.0		µg/L	1	8/20/2015 1:57:15 PM	R28360
2-Butanone	ND	10		µg/L	1	8/20/2015 1:57:15 PM	R28360
Carbon disulfide	ND	10		µg/L	1	8/20/2015 1:57:15 PM	R28360
Carbon Tetrachloride	ND	1.0		µg/L	1	8/20/2015 1:57:15 PM	R28360
Chlorobenzene	ND	1.0		µg/L	1	8/20/2015 1:57:15 PM	R28360
Chloroethane	ND	2.0		µg/L	1	8/20/2015 1:57:15 PM	R28360
Chloroform	ND	1.0		µg/L	1	8/20/2015 1:57:15 PM	R28360
Chloromethane	ND	3.0		µg/L	1	8/20/2015 1:57:15 PM	R28360
2-Chlorotoluene	ND	1.0		µg/L	1	8/20/2015 1:57:15 PM	R28360
4-Chlorotoluene	ND	1.0		µg/L	1	8/20/2015 1:57:15 PM	R28360
cis-1,2-DCE	ND	1.0		µg/L	1	8/20/2015 1:57:15 PM	R28360
cis-1,3-Dichloropropene	ND	1.0		µg/L	1	8/20/2015 1:57:15 PM	R28360
1,2-Dibromo-3-chloropropane	ND	2.0		µg/L	1	8/20/2015 1:57:15 PM	R28360
Dibromochloromethane	ND	1.0		µg/L	1	8/20/2015 1:57:15 PM	R28360
Dibromomethane	ND	1.0		µg/L	1	8/20/2015 1:57:15 PM	R28360
1,2-Dichlorobenzene	ND	1.0		µg/L	1	8/20/2015 1:57:15 PM	R28360
1,3-Dichlorobenzene	ND	1.0		µg/L	1	8/20/2015 1:57:15 PM	R28360
1,4-Dichlorobenzene	ND	1.0		µg/L	1	8/20/2015 1:57:15 PM	R28360
Dichlorodifluoromethane	ND	1.0		µg/L	1	8/20/2015 1:57:15 PM	R28360
1,1-Dichloroethane	ND	1.0		µg/L	1	8/20/2015 1:57:15 PM	R28360
1,1-Dichloroethene	ND	1.0		µg/L	1	8/20/2015 1:57:15 PM	R28360
1,2-Dichloropropane	ND	1.0		µg/L	1	8/20/2015 1:57:15 PM	R28360
1,3-Dichloropropane	ND	1.0		µg/L	1	8/20/2015 1:57:15 PM	R28360
2,2-Dichloropropane	ND	2.0		µg/L	1	8/20/2015 1:57:15 PM	R28360
1,1-Dichloropropene	ND	1.0		µg/L	1	8/20/2015 1:57:15 PM	R28360
Hexachlorobutadiene	ND	1.0		µg/L	1	8/20/2015 1:57:15 PM	R28360

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
				Page 1 of 105

Analytical Report

Lab Order: 1508875

Date Reported: 9/15/2015

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Southwest, Inc.
Project: RCRA Wells 8-18-15
Lab ID: 1508875-001A

Client Sample ID: MW-51
Collection Date: 8/18/2015 7:50:00 AM
Matrix: Aqueous

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES				Analyst: DJF			
2-Hexanone	ND	10		µg/L	1	8/20/2015 1:57:15 PM	R28360
Isopropylbenzene	ND	1.0		µg/L	1	8/20/2015 1:57:15 PM	R28360
4-Isopropyltoluene	ND	1.0		µg/L	1	8/20/2015 1:57:15 PM	R28360
4-Methyl-2-pentanone	ND	10		µg/L	1	8/20/2015 1:57:15 PM	R28360
Methylene Chloride	ND	3.0		µg/L	1	8/20/2015 1:57:15 PM	R28360
n-Butylbenzene	ND	3.0		µg/L	1	8/20/2015 1:57:15 PM	R28360
n-Propylbenzene	ND	1.0		µg/L	1	8/20/2015 1:57:15 PM	R28360
sec-Butylbenzene	ND	1.0		µg/L	1	8/20/2015 1:57:15 PM	R28360
Styrene	ND	1.0		µg/L	1	8/20/2015 1:57:15 PM	R28360
tert-Butylbenzene	ND	1.0		µg/L	1	8/20/2015 1:57:15 PM	R28360
1,1,1,2-Tetrachloroethane	ND	1.0		µg/L	1	8/20/2015 1:57:15 PM	R28360
1,1,2,2-Tetrachloroethane	ND	2.0		µg/L	1	8/20/2015 1:57:15 PM	R28360
Tetrachloroethene (PCE)	ND	1.0		µg/L	1	8/20/2015 1:57:15 PM	R28360
trans-1,2-DCE	ND	1.0		µg/L	1	8/20/2015 1:57:15 PM	R28360
trans-1,3-Dichloropropene	ND	1.0		µg/L	1	8/20/2015 1:57:15 PM	R28360
1,2,3-Trichlorobenzene	ND	1.0		µg/L	1	8/20/2015 1:57:15 PM	R28360
1,2,4-Trichlorobenzene	ND	1.0		µg/L	1	8/20/2015 1:57:15 PM	R28360
1,1,1-Trichloroethane	ND	1.0		µg/L	1	8/20/2015 1:57:15 PM	R28360
1,1,2-Trichloroethane	ND	1.0		µg/L	1	8/20/2015 1:57:15 PM	R28360
Trichloroethene (TCE)	ND	1.0		µg/L	1	8/20/2015 1:57:15 PM	R28360
Trichlorofluoromethane	ND	1.0		µg/L	1	8/20/2015 1:57:15 PM	R28360
1,2,3-Trichloropropane	ND	2.0		µg/L	1	8/20/2015 1:57:15 PM	R28360
Vinyl chloride	ND	1.0		µg/L	1	8/20/2015 1:57:15 PM	R28360
Xylenes, Total	ND	1.5		µg/L	1	8/20/2015 1:57:15 PM	R28360
Surr: 1,2-Dichloroethane-d4	98.4	70-130		%REC	1	8/20/2015 1:57:15 PM	R28360
Surr: 4-Bromofluorobenzene	108	70-130		%REC	1	8/20/2015 1:57:15 PM	R28360
Surr: Dibromofluoromethane	112	70-130		%REC	1	8/20/2015 1:57:15 PM	R28360
Surr: Toluene-d8	98.0	70-130		%REC	1	8/20/2015 1:57:15 PM	R28360

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Analytical ReportLab Order: **1508875**Date Reported: **9/15/2015****Hall Environmental Analysis Laboratory, Inc.****CLIENT:** Western Refining Southwest, Inc.**Client Sample ID:** MW-51**Project:** RCRA Wells 8-18-15**Collection Date:** 8/18/2015 7:50:00 AM**Lab ID:** 1508875-001B**Matrix:** Aqueous

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D: GASOLINE RANGE							Analyst: DJF
Gasoline Range Organics (GRO)	ND	0.050		mg/L	1	8/20/2015 1:57:15 PM	C28360
Surr: BFB	99.2	70-130		%REC	1	8/20/2015 1:57:15 PM	C28360

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Analytical ReportLab Order: **1508875**Date Reported: **9/15/2015****Hall Environmental Analysis Laboratory, Inc.****CLIENT:** Western Refining Southwest, Inc.**Client Sample ID:** MW-51**Project:** RCRA Wells 8-18-15**Collection Date:** 8/18/2015 7:50:00 AM**Lab ID:** 1508875-001C**Matrix:** Aqueous

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D: DIESEL RANGE							Analyst: TOM
Diesel Range Organics (DRO)	ND	0.20		mg/L	1	8/19/2015 5:15:24 PM	20869
Motor Oil Range Organics (MRO)	ND	2.5		mg/L	1	8/19/2015 5:15:24 PM	20869
Surr: DNOP	101	84.6-165		%REC	1	8/19/2015 5:15:24 PM	20869

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order: 1508875

Date Reported: 9/15/2015

CLIENT: Western Refining Southwest, Inc.
Project: RCRA Wells 8-18-15
Lab ID: 1508875-001D

Client Sample ID: MW-51
Collection Date: 8/18/2015 7:50:00 AM
Matrix: Aqueous

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
CARBON DIOXIDE							Analyst: MRA
Total Carbon Dioxide	240	1.0	H	mg CO2/L	1	8/21/2015 6:20:59 PM	R28401
EPA METHOD 300.0: ANIONS							Analyst: LGT
Fluoride	0.52	0.10		mg/L	1	8/19/2015 6:16:18 PM	R28334
Chloride	8.3	0.50		mg/L	1	8/19/2015 6:16:18 PM	R28334
Nitrogen, Nitrite (As N)	ND	0.10		mg/L	1	8/19/2015 6:16:18 PM	R28334
Bromide	ND	0.10		mg/L	1	8/19/2015 6:16:18 PM	R28334
Nitrogen, Nitrate (As N)	0.34	0.10		mg/L	1	8/19/2015 6:16:18 PM	R28334
Phosphorus, Orthophosphate (As P)	ND	0.50		mg/L	1	8/19/2015 6:16:18 PM	R28334
Sulfate	43	0.50		mg/L	1	8/19/2015 6:16:18 PM	R28334
SM2510B: SPECIFIC CONDUCTANCE							Analyst: MRA
Conductivity	580	0.010		µmhos/cm	1	8/21/2015 6:20:59 PM	R28401
SM2320B: ALKALINITY							Analyst: MRA
Bicarbonate (As CaCO3)	264.9	20.00		mg/L CaCO3	1	8/21/2015 6:20:59 PM	R28401
Carbonate (As CaCO3)	ND	2.000		mg/L CaCO3	1	8/21/2015 6:20:59 PM	R28401
Total Alkalinity (as CaCO3)	264.9	20.00		mg/L CaCO3	1	8/21/2015 6:20:59 PM	R28401
SM2540C MOD: TOTAL DISSOLVED SOLIDS							Analyst: KS
Total Dissolved Solids	346	40.0	D	mg/L	1	8/20/2015 3:44:00 PM	20886

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order: 1508875

Date Reported: 9/15/2015

CLIENT: Western Refining Southwest, Inc.
Project: RCRA Wells 8-18-15
Lab ID: 1508875-001E

Client Sample ID: MW-51
Collection Date: 8/18/2015 7:50:00 AM
Matrix: Aqueous

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 7470: MERCURY							Analyst: JLF
Mercury	ND	0.00020		mg/L	1	8/26/2015 4:06:27 PM	20989
EPA 6010B: TOTAL RECOVERABLE METALS							Analyst: MED
Arsenic	ND	0.020		mg/L	1	8/25/2015 1:10:49 PM	20922
Barium	0.11	0.020		mg/L	1	8/25/2015 1:10:49 PM	20922
Cadmium	ND	0.0020		mg/L	1	8/25/2015 1:10:49 PM	20922
Chromium	ND	0.0060		mg/L	1	8/25/2015 1:10:49 PM	20922
Lead	ND	0.0050		mg/L	1	8/25/2015 1:10:49 PM	20922
Selenium	ND	0.050		mg/L	1	8/25/2015 1:10:49 PM	20922
Silver	ND	0.0050		mg/L	1	8/25/2015 1:10:49 PM	20922

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
				Page 6 of 105

Analytical ReportLab Order: **1508875**Date Reported: **9/15/2015****Hall Environmental Analysis Laboratory, Inc.**

CLIENT: Western Refining Southwest, Inc.
Project: RCRA Wells 8-18-15
Lab ID: 1508875-001F

Client Sample ID: MW-51
Collection Date: 8/18/2015 7:50:00 AM
Matrix: Aqueous

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 7470: MERCURY							Analyst: JLF
Mercury	ND	0.00020		mg/L	1	8/26/2015 4:43:41 PM	20989
EPA METHOD 6010B: DISSOLVED METALS							Analyst: MED
Arsenic	ND	0.020		mg/L	1	8/24/2015 1:35:43 PM	B28416
Barium	0.050	0.020		mg/L	1	8/24/2015 1:35:43 PM	B28416
Cadmium	ND	0.0020		mg/L	1	8/24/2015 1:35:43 PM	B28416
Calcium	63	1.0		mg/L	1	8/24/2015 1:35:43 PM	B28416
Chromium	ND	0.0060		mg/L	1	8/24/2015 1:35:43 PM	B28416
Copper	ND	0.0060		mg/L	1	8/24/2015 1:35:43 PM	B28416
Iron	0.041	0.020		mg/L	1	8/24/2015 1:35:43 PM	B28416
Lead	ND	0.0050		mg/L	1	8/24/2015 1:35:43 PM	B28416
Magnesium	13	1.0		mg/L	1	8/25/2015 12:05:18 PM	A28442
Manganese	0.77	0.0020		mg/L	1	8/24/2015 1:35:43 PM	B28416
Potassium	1.7	1.0		mg/L	1	8/24/2015 1:35:43 PM	B28416
Selenium	ND	0.050		mg/L	1	8/24/2015 1:35:43 PM	B28416
Silver	ND	0.0050		mg/L	1	8/24/2015 1:35:43 PM	B28416
Sodium	47	1.0		mg/L	1	8/24/2015 1:35:43 PM	B28416
Uranium	ND	0.10		mg/L	1	8/24/2015 1:35:43 PM	B28416
Zinc	ND	0.020		mg/L	1	8/24/2015 1:35:43 PM	B28416

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Analytical Report

Lab Order: 1508875

Hall Environmental Analysis Laboratory, Inc.

Date Reported: 9/15/2015

CLIENT: Western Refining Southwest, Inc.
Project: RCRA Wells 8-18-15
Lab ID: 1508875-002A

Client Sample ID: MW-70
Collection Date: 8/18/2015 8:10:00 AM
Matrix: Aqueous

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES				Analyst: DJF			
Benzene	ND	1.0		µg/L	1	8/20/2015 3:20:04 PM	R28360
Toluene	ND	1.0		µg/L	1	8/20/2015 3:20:04 PM	R28360
Ethylbenzene	ND	1.0		µg/L	1	8/20/2015 3:20:04 PM	R28360
Methyl tert-butyl ether (MTBE)	ND	1.0		µg/L	1	8/20/2015 3:20:04 PM	R28360
1,2,4-Trimethylbenzene	ND	1.0		µg/L	1	8/20/2015 3:20:04 PM	R28360
1,3,5-Trimethylbenzene	ND	1.0		µg/L	1	8/20/2015 3:20:04 PM	R28360
1,2-Dichloroethane (EDC)	ND	1.0		µg/L	1	8/20/2015 3:20:04 PM	R28360
1,2-Dibromoethane (EDB)	ND	1.0		µg/L	1	8/20/2015 3:20:04 PM	R28360
Naphthalene	ND	2.0		µg/L	1	8/20/2015 3:20:04 PM	R28360
1-Methylnaphthalene	ND	4.0		µg/L	1	8/20/2015 3:20:04 PM	R28360
2-Methylnaphthalene	ND	4.0		µg/L	1	8/20/2015 3:20:04 PM	R28360
Acetone	ND	10		µg/L	1	8/20/2015 3:20:04 PM	R28360
Bromobenzene	ND	1.0		µg/L	1	8/20/2015 3:20:04 PM	R28360
Bromodichloromethane	ND	1.0		µg/L	1	8/20/2015 3:20:04 PM	R28360
Bromoform	ND	1.0		µg/L	1	8/20/2015 3:20:04 PM	R28360
Bromomethane	ND	3.0		µg/L	1	8/20/2015 3:20:04 PM	R28360
2-Butanone	ND	10		µg/L	1	8/20/2015 3:20:04 PM	R28360
Carbon disulfide	ND	10		µg/L	1	8/20/2015 3:20:04 PM	R28360
Carbon Tetrachloride	ND	1.0		µg/L	1	8/20/2015 3:20:04 PM	R28360
Chlorobenzene	ND	1.0		µg/L	1	8/20/2015 3:20:04 PM	R28360
Chloroethane	ND	2.0		µg/L	1	8/20/2015 3:20:04 PM	R28360
Chloroform	ND	1.0		µg/L	1	8/20/2015 3:20:04 PM	R28360
Chloromethane	ND	3.0		µg/L	1	8/20/2015 3:20:04 PM	R28360
2-Chlorotoluene	ND	1.0		µg/L	1	8/20/2015 3:20:04 PM	R28360
4-Chlorotoluene	ND	1.0		µg/L	1	8/20/2015 3:20:04 PM	R28360
cis-1,2-DCE	ND	1.0		µg/L	1	8/20/2015 3:20:04 PM	R28360
cis-1,3-Dichloropropene	ND	1.0		µg/L	1	8/20/2015 3:20:04 PM	R28360
1,2-Dibromo-3-chloropropane	ND	2.0		µg/L	1	8/20/2015 3:20:04 PM	R28360
Dibromochloromethane	ND	1.0		µg/L	1	8/20/2015 3:20:04 PM	R28360
Dibromomethane	ND	1.0		µg/L	1	8/20/2015 3:20:04 PM	R28360
1,2-Dichlorobenzene	ND	1.0		µg/L	1	8/20/2015 3:20:04 PM	R28360
1,3-Dichlorobenzene	ND	1.0		µg/L	1	8/20/2015 3:20:04 PM	R28360
1,4-Dichlorobenzene	ND	1.0		µg/L	1	8/20/2015 3:20:04 PM	R28360
Dichlorodifluoromethane	ND	1.0		µg/L	1	8/20/2015 3:20:04 PM	R28360
1,1-Dichloroethane	ND	1.0		µg/L	1	8/20/2015 3:20:04 PM	R28360
1,1-Dichloroethene	ND	1.0		µg/L	1	8/20/2015 3:20:04 PM	R28360
1,2-Dichloropropane	ND	1.0		µg/L	1	8/20/2015 3:20:04 PM	R28360
1,3-Dichloropropane	ND	1.0		µg/L	1	8/20/2015 3:20:04 PM	R28360
2,2-Dichloropropane	ND	2.0		µg/L	1	8/20/2015 3:20:04 PM	R28360
1,1-Dichloropropene	ND	1.0		µg/L	1	8/20/2015 3:20:04 PM	R28360
Hexachlorobutadiene	ND	1.0		µg/L	1	8/20/2015 3:20:04 PM	R28360

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Analytical Report

Lab Order: 1508875

Hall Environmental Analysis Laboratory, Inc.

Date Reported: 9/15/2015

CLIENT: Western Refining Southwest, Inc.
Project: RCRA Wells 8-18-15
Lab ID: 1508875-002A

Client Sample ID: MW-70
Collection Date: 8/18/2015 8:10:00 AM
Matrix: Aqueous

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: DJF
2-Hexanone	ND	10		µg/L	1	8/20/2015 3:20:04 PM	R28360
Isopropylbenzene	ND	1.0		µg/L	1	8/20/2015 3:20:04 PM	R28360
4-Isopropyltoluene	ND	1.0		µg/L	1	8/20/2015 3:20:04 PM	R28360
4-Methyl-2-pentanone	ND	10		µg/L	1	8/20/2015 3:20:04 PM	R28360
Methylene Chloride	ND	3.0		µg/L	1	8/20/2015 3:20:04 PM	R28360
n-Butylbenzene	ND	3.0		µg/L	1	8/20/2015 3:20:04 PM	R28360
n-Propylbenzene	ND	1.0		µg/L	1	8/20/2015 3:20:04 PM	R28360
sec-Butylbenzene	ND	1.0		µg/L	1	8/20/2015 3:20:04 PM	R28360
Styrene	ND	1.0		µg/L	1	8/20/2015 3:20:04 PM	R28360
tert-Butylbenzene	ND	1.0		µg/L	1	8/20/2015 3:20:04 PM	R28360
1,1,1,2-Tetrachloroethane	ND	1.0		µg/L	1	8/20/2015 3:20:04 PM	R28360
1,1,2,2-Tetrachloroethane	ND	2.0		µg/L	1	8/20/2015 3:20:04 PM	R28360
Tetrachloroethene (PCE)	ND	1.0		µg/L	1	8/20/2015 3:20:04 PM	R28360
trans-1,2-DCE	ND	1.0		µg/L	1	8/20/2015 3:20:04 PM	R28360
trans-1,3-Dichloropropene	ND	1.0		µg/L	1	8/20/2015 3:20:04 PM	R28360
1,2,3-Trichlorobenzene	ND	1.0		µg/L	1	8/20/2015 3:20:04 PM	R28360
1,2,4-Trichlorobenzene	ND	1.0		µg/L	1	8/20/2015 3:20:04 PM	R28360
1,1,1-Trichloroethane	ND	1.0		µg/L	1	8/20/2015 3:20:04 PM	R28360
1,1,2-Trichloroethane	ND	1.0		µg/L	1	8/20/2015 3:20:04 PM	R28360
Trichloroethene (TCE)	ND	1.0		µg/L	1	8/20/2015 3:20:04 PM	R28360
Trichlorofluoromethane	ND	1.0		µg/L	1	8/20/2015 3:20:04 PM	R28360
1,2,3-Trichloropropane	ND	2.0		µg/L	1	8/20/2015 3:20:04 PM	R28360
Vinyl chloride	ND	1.0		µg/L	1	8/20/2015 3:20:04 PM	R28360
Xylenes, Total	ND	1.5		µg/L	1	8/20/2015 3:20:04 PM	R28360
Surr: 1,2-Dichloroethane-d4	101	70-130		%REC	1	8/20/2015 3:20:04 PM	R28360
Surr: 4-Bromofluorobenzene	114	70-130		%REC	1	8/20/2015 3:20:04 PM	R28360
Surr: Dibromofluoromethane	114	70-130		%REC	1	8/20/2015 3:20:04 PM	R28360
Surr: Toluene-d8	97.2	70-130		%REC	1	8/20/2015 3:20:04 PM	R28360

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
				Page 9 of 105

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order: 1508875

Date Reported: 9/15/2015

CLIENT: Western Refining Southwest, Inc.
Project: RCRA Wells 8-18-15
Lab ID: 1508875-002B

Client Sample ID: MW-70
Collection Date: 8/18/2015 8:10:00 AM
Matrix: Aqueous

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D: GASOLINE RANGE							Analyst: DJF
Gasoline Range Organics (GRO)	ND	0.050		mg/L	1	8/20/2015 3:20:04 PM	C28360
Surr: BFB	103	70-130		%REC	1	8/20/2015 3:20:04 PM	C28360

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Analytical ReportLab Order: **1508875**Date Reported: **9/15/2015****Hall Environmental Analysis Laboratory, Inc.****CLIENT:** Western Refining Southwest, Inc.**Client Sample ID:** MW-70**Project:** RCRA Wells 8-18-15**Collection Date:** 8/18/2015 8:10:00 AM**Lab ID:** 1508875-002C**Matrix:** Aqueous

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D: DIESEL RANGE							Analyst: TOM
Diesel Range Organics (DRO)	ND	0.20		mg/L	1	8/19/2015 6:19:32 PM	20869
Motor Oil Range Organics (MRO)	ND	2.5		mg/L	1	8/19/2015 6:19:32 PM	20869
Surr: DNOP	106	84.6-165		%REC	1	8/19/2015 6:19:32 PM	20869

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order: 1508875

Date Reported: 9/15/2015

CLIENT: Western Refining Southwest, Inc.
Project: RCRA Wells 8-18-15
Lab ID: 1508875-002D

Client Sample ID: MW-70
Collection Date: 8/18/2015 8:10:00 AM
Matrix: Aqueous

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
CARBON DIOXIDE							Analyst: MRA
Total Carbon Dioxide	780	1.0	H	mg CO2/L	1	8/21/2015 6:33:27 PM	R28401
EPA METHOD 300.0: ANIONS							Analyst: LGT
Fluoride	0.70	0.50		mg/L	5	8/19/2015 7:05:56 PM	R28334
Chloride	420	50	*	mg/L	100	8/25/2015 1:35:35 AM	R28432
Nitrogen, Nitrite (As N)	ND	0.50		mg/L	5	8/19/2015 7:05:56 PM	R28334
Bromide	2.4	0.50		mg/L	5	8/19/2015 7:05:56 PM	R28334
Nitrogen, Nitrate (As N)	ND	0.50		mg/L	5	8/19/2015 7:05:56 PM	R28334
Phosphorus, Orthophosphate (As P)	ND	2.5		mg/L	5	8/19/2015 7:05:56 PM	R28334
Sulfate	2400	50	*	mg/L	100	8/25/2015 1:35:35 AM	R28432
SM2510B: SPECIFIC CONDUCTANCE							Analyst: MRA
Conductivity	5500	0.010		µmhos/cm	1	8/21/2015 6:33:27 PM	R28401
SM2320B: ALKALINITY							Analyst: MRA
Bicarbonate (As CaCO3)	809.4	20.00		mg/L CaCO3	1	8/21/2015 6:33:27 PM	R28401
Carbonate (As CaCO3)	ND	2.000		mg/L CaCO3	1	8/21/2015 6:33:27 PM	R28401
Total Alkalinity (as CaCO3)	809.4	20.00		mg/L CaCO3	1	8/21/2015 6:33:27 PM	R28401
SM2540C MOD: TOTAL DISSOLVED SOLIDS							Analyst: KS
Total Dissolved Solids	4960	200	*D	mg/L	1	8/20/2015 3:44:00 PM	20886

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Analytical ReportLab Order: **1508875**Date Reported: **9/15/2015****Hall Environmental Analysis Laboratory, Inc.**

CLIENT: Western Refining Southwest, Inc.
Project: RCRA Wells 8-18-15
Lab ID: 1508875-002E

Client Sample ID: MW-70
Collection Date: 8/18/2015 8:10:00 AM
Matrix: Aqueous

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 7470: MERCURY							Analyst: JLF
Mercury	ND	0.00020		mg/L	1	8/26/2015 4:12:42 PM	20989
EPA 6010B: TOTAL RECOVERABLE METALS							Analyst: MED
Arsenic	ND	0.020		mg/L	1	8/25/2015 1:12:35 PM	20922
Barium	0.023	0.020		mg/L	1	8/25/2015 1:12:35 PM	20922
Cadmium	ND	0.0020		mg/L	1	8/25/2015 1:12:35 PM	20922
Chromium	ND	0.0060		mg/L	1	8/25/2015 1:12:35 PM	20922
Lead	ND	0.0050		mg/L	1	8/25/2015 1:12:35 PM	20922
Selenium	ND	0.050		mg/L	1	8/25/2015 1:12:35 PM	20922
Silver	ND	0.0050		mg/L	1	8/25/2015 1:12:35 PM	20922

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order: 1508875

Date Reported: 9/15/2015

CLIENT: Western Refining Southwest, Inc.
Project: RCRA Wells 8-18-15
Lab ID: 1508875-002F

Client Sample ID: MW-70
Collection Date: 8/18/2015 8:10:00 AM
Matrix: Aqueous

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 7470: MERCURY				Analyst: JLF			
Mercury	ND	0.00020		mg/L	1	8/26/2015 4:45:45 PM	20989
EPA METHOD 6010B: DISSOLVED METALS				Analyst: MED			
Arsenic	ND	0.020		mg/L	1	8/24/2015 1:37:35 PM	B28416
Barium	0.024	0.020		mg/L	1	8/24/2015 1:37:35 PM	B28416
Cadmium	ND	0.0020		mg/L	1	8/24/2015 1:37:35 PM	B28416
Calcium	640	10		mg/L	10	8/24/2015 4:09:10 PM	B28416
Chromium	ND	0.0060		mg/L	1	8/24/2015 1:37:35 PM	B28416
Copper	ND	0.0060		mg/L	1	8/24/2015 1:37:35 PM	B28416
Iron	8.5	0.20		mg/L	10	8/24/2015 4:09:10 PM	B28416
Lead	ND	0.0050		mg/L	1	8/24/2015 1:37:35 PM	B28416
Magnesium	180	5.0		mg/L	5	8/25/2015 12:07:08 PM	A28442
Manganese	4.3	0.020		mg/L	10	8/24/2015 2:52:48 PM	B28416
Potassium	4.2	1.0		mg/L	1	8/24/2015 1:37:35 PM	B28416
Selenium	ND	0.050		mg/L	1	8/24/2015 1:37:35 PM	B28416
Silver	ND	0.0050		mg/L	1	8/24/2015 1:37:35 PM	B28416
Sodium	730	10		mg/L	10	8/24/2015 4:09:10 PM	B28416
Uranium	ND	0.10		mg/L	1	8/24/2015 1:37:35 PM	B28416
Zinc	0.028	0.020		mg/L	1	8/24/2015 1:37:35 PM	B28416

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Analytical Report

Lab Order: 1508875

Hall Environmental Analysis Laboratory, Inc.

Date Reported: 9/15/2015

CLIENT: Western Refining Southwest, Inc.
Project: RCRA Wells 8-18-15
Lab ID: 1508875-003A

Client Sample ID: MW-53
Collection Date: 8/18/2015 9:05:00 AM
Matrix: Aqueous

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES				Analyst: DJF			
Benzene	ND	1.0		µg/L	1	8/20/2015 3:47:43 PM	R28360
Toluene	ND	1.0		µg/L	1	8/20/2015 3:47:43 PM	R28360
Ethylbenzene	ND	1.0		µg/L	1	8/20/2015 3:47:43 PM	R28360
Methyl tert-butyl ether (MTBE)	ND	1.0		µg/L	1	8/20/2015 3:47:43 PM	R28360
1,2,4-Trimethylbenzene	ND	1.0		µg/L	1	8/20/2015 3:47:43 PM	R28360
1,3,5-Trimethylbenzene	ND	1.0		µg/L	1	8/20/2015 3:47:43 PM	R28360
1,2-Dichloroethane (EDC)	ND	1.0		µg/L	1	8/20/2015 3:47:43 PM	R28360
1,2-Dibromoethane (EDB)	ND	1.0		µg/L	1	8/20/2015 3:47:43 PM	R28360
Naphthalene	ND	2.0		µg/L	1	8/20/2015 3:47:43 PM	R28360
1-Methylnaphthalene	ND	4.0		µg/L	1	8/20/2015 3:47:43 PM	R28360
2-Methylnaphthalene	ND	4.0		µg/L	1	8/20/2015 3:47:43 PM	R28360
Acetone	ND	10		µg/L	1	8/20/2015 3:47:43 PM	R28360
Bromobenzene	ND	1.0		µg/L	1	8/20/2015 3:47:43 PM	R28360
Bromodichloromethane	ND	1.0		µg/L	1	8/20/2015 3:47:43 PM	R28360
Bromoform	ND	1.0		µg/L	1	8/20/2015 3:47:43 PM	R28360
Bromomethane	ND	3.0		µg/L	1	8/20/2015 3:47:43 PM	R28360
2-Butanone	ND	10		µg/L	1	8/20/2015 3:47:43 PM	R28360
Carbon disulfide	ND	10		µg/L	1	8/20/2015 3:47:43 PM	R28360
Carbon Tetrachloride	ND	1.0		µg/L	1	8/20/2015 3:47:43 PM	R28360
Chlorobenzene	ND	1.0		µg/L	1	8/20/2015 3:47:43 PM	R28360
Chloroethane	ND	2.0		µg/L	1	8/20/2015 3:47:43 PM	R28360
Chloroform	ND	1.0		µg/L	1	8/20/2015 3:47:43 PM	R28360
Chloromethane	ND	3.0		µg/L	1	8/20/2015 3:47:43 PM	R28360
2-Chlorotoluene	ND	1.0		µg/L	1	8/20/2015 3:47:43 PM	R28360
4-Chlorotoluene	ND	1.0		µg/L	1	8/20/2015 3:47:43 PM	R28360
cis-1,2-DCE	ND	1.0		µg/L	1	8/20/2015 3:47:43 PM	R28360
cis-1,3-Dichloropropene	ND	1.0		µg/L	1	8/20/2015 3:47:43 PM	R28360
1,2-Dibromo-3-chloropropane	ND	2.0		µg/L	1	8/20/2015 3:47:43 PM	R28360
Dibromochloromethane	ND	1.0		µg/L	1	8/20/2015 3:47:43 PM	R28360
Dibromomethane	ND	1.0		µg/L	1	8/20/2015 3:47:43 PM	R28360
1,2-Dichlorobenzene	ND	1.0		µg/L	1	8/20/2015 3:47:43 PM	R28360
1,3-Dichlorobenzene	ND	1.0		µg/L	1	8/20/2015 3:47:43 PM	R28360
1,4-Dichlorobenzene	ND	1.0		µg/L	1	8/20/2015 3:47:43 PM	R28360
Dichlorodifluoromethane	ND	1.0		µg/L	1	8/20/2015 3:47:43 PM	R28360
1,1-Dichloroethane	ND	1.0		µg/L	1	8/20/2015 3:47:43 PM	R28360
1,1-Dichloroethene	ND	1.0		µg/L	1	8/20/2015 3:47:43 PM	R28360
1,2-Dichloropropane	ND	1.0		µg/L	1	8/20/2015 3:47:43 PM	R28360
1,3-Dichloropropane	ND	1.0		µg/L	1	8/20/2015 3:47:43 PM	R28360
2,2-Dichloropropane	ND	2.0		µg/L	1	8/20/2015 3:47:43 PM	R28360
1,1-Dichloropropene	ND	1.0		µg/L	1	8/20/2015 3:47:43 PM	R28360
Hexachlorobutadiene	ND	1.0		µg/L	1	8/20/2015 3:47:43 PM	R28360

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Analytical Report

Lab Order: 1508875

Hall Environmental Analysis Laboratory, Inc.

Date Reported: 9/15/2015

CLIENT: Western Refining Southwest, Inc.
Project: RCRA Wells 8-18-15
Lab ID: 1508875-003A

Client Sample ID: MW-53
Collection Date: 8/18/2015 9:05:00 AM
Matrix: Aqueous

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES				Analyst: DJF			
2-Hexanone	ND	10		µg/L	1	8/20/2015 3:47:43 PM	R28360
Isopropylbenzene	ND	1.0		µg/L	1	8/20/2015 3:47:43 PM	R28360
4-Isopropyltoluene	ND	1.0		µg/L	1	8/20/2015 3:47:43 PM	R28360
4-Methyl-2-pentanone	ND	10		µg/L	1	8/20/2015 3:47:43 PM	R28360
Methylene Chloride	ND	3.0		µg/L	1	8/20/2015 3:47:43 PM	R28360
n-Butylbenzene	ND	3.0		µg/L	1	8/20/2015 3:47:43 PM	R28360
n-Propylbenzene	ND	1.0		µg/L	1	8/20/2015 3:47:43 PM	R28360
sec-Butylbenzene	ND	1.0		µg/L	1	8/20/2015 3:47:43 PM	R28360
Styrene	ND	1.0		µg/L	1	8/20/2015 3:47:43 PM	R28360
tert-Butylbenzene	ND	1.0		µg/L	1	8/20/2015 3:47:43 PM	R28360
1,1,1,2-Tetrachloroethane	ND	1.0		µg/L	1	8/20/2015 3:47:43 PM	R28360
1,1,2,2-Tetrachloroethane	ND	2.0		µg/L	1	8/20/2015 3:47:43 PM	R28360
Tetrachloroethene (PCE)	ND	1.0		µg/L	1	8/20/2015 3:47:43 PM	R28360
trans-1,2-DCE	ND	1.0		µg/L	1	8/20/2015 3:47:43 PM	R28360
trans-1,3-Dichloropropene	ND	1.0		µg/L	1	8/20/2015 3:47:43 PM	R28360
1,2,3-Trichlorobenzene	ND	1.0		µg/L	1	8/20/2015 3:47:43 PM	R28360
1,2,4-Trichlorobenzene	ND	1.0		µg/L	1	8/20/2015 3:47:43 PM	R28360
1,1,1-Trichloroethane	ND	1.0		µg/L	1	8/20/2015 3:47:43 PM	R28360
1,1,2-Trichloroethane	ND	1.0		µg/L	1	8/20/2015 3:47:43 PM	R28360
Trichloroethene (TCE)	ND	1.0		µg/L	1	8/20/2015 3:47:43 PM	R28360
Trichlorofluoromethane	ND	1.0		µg/L	1	8/20/2015 3:47:43 PM	R28360
1,2,3-Trichloropropane	ND	2.0		µg/L	1	8/20/2015 3:47:43 PM	R28360
Vinyl chloride	ND	1.0		µg/L	1	8/20/2015 3:47:43 PM	R28360
Xylenes, Total	ND	1.5		µg/L	1	8/20/2015 3:47:43 PM	R28360
Surr: 1,2-Dichloroethane-d4	104	70-130		%REC	1	8/20/2015 3:47:43 PM	R28360
Surr: 4-Bromofluorobenzene	111	70-130		%REC	1	8/20/2015 3:47:43 PM	R28360
Surr: Dibromofluoromethane	116	70-130		%REC	1	8/20/2015 3:47:43 PM	R28360
Surr: Toluene-d8	98.1	70-130		%REC	1	8/20/2015 3:47:43 PM	R28360

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Analytical ReportLab Order: **1508875**Date Reported: **9/15/2015****Hall Environmental Analysis Laboratory, Inc.****CLIENT:** Western Refining Southwest, Inc.**Client Sample ID:** MW-53**Project:** RCRA Wells 8-18-15**Collection Date:** 8/18/2015 9:05:00 AM**Lab ID:** 1508875-003B**Matrix:** Aqueous

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D: GASOLINE RANGE							Analyst: DJF
Gasoline Range Organics (GRO)	ND	0.050		mg/L	1	8/20/2015 3:47:43 PM	C28360
Surr: BFB	100	70-130		%REC	1	8/20/2015 3:47:43 PM	C28360

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order: 1508875

Date Reported: 9/15/2015

CLIENT: Western Refining Southwest, Inc.
Project: RCRA Wells 8-18-15
Lab ID: 1508875-003C

Client Sample ID: MW-53
Collection Date: 8/18/2015 9:05:00 AM
Matrix: Aqueous

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D: DIESEL RANGE							Analyst: TOM
Diesel Range Organics (DRO)	ND	0.20		mg/L	1	8/19/2015 6:40:59 PM	20869
Motor Oil Range Organics (MRO)	ND	2.5		mg/L	1	8/19/2015 6:40:59 PM	20869
Surr: DNOP	102	84.6-165		%REC	1	8/19/2015 6:40:59 PM	20869

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order: 1508875

Date Reported: 9/15/2015

CLIENT: Western Refining Southwest, Inc.
Project: RCRA Wells 8-18-15
Lab ID: 1508875-003D

Client Sample ID: MW-53
Collection Date: 8/18/2015 9:05:00 AM
Matrix: Aqueous

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
CARBON DIOXIDE							Analyst: MRA
Total Carbon Dioxide	300	1.0	H	mg CO2/L	1	8/21/2015 7:03:20 PM	R28401
EPA METHOD 300.0: ANIONS							Analyst: LGT
Fluoride	ND	0.10		mg/L	1	8/19/2015 7:30:45 PM	R28334
Chloride	920	50	*	mg/L	100	8/25/2015 1:48:00 AM	R28432
Nitrogen, Nitrite (As N)	ND	2.0		mg/L	20	8/19/2015 7:43:09 PM	R28334
Bromide	3.0	2.0		mg/L	20	8/19/2015 7:43:09 PM	R28334
Nitrogen, Nitrate (As N)	12	2.0	*	mg/L	20	8/19/2015 7:43:09 PM	R28334
Phosphorus, Orthophosphate (As P)	ND	0.50		mg/L	1	8/19/2015 7:30:45 PM	R28334
Sulfate	980	50	*	mg/L	100	8/25/2015 1:48:00 AM	R28432
SM2510B: SPECIFIC CONDUCTANCE							Analyst: MRA
Conductivity	5000	0.010		µmhos/cm	1	8/21/2015 7:03:20 PM	R28401
SM2320B: ALKALINITY							Analyst: MRA
Bicarbonate (As CaCO3)	329.8	20.00		mg/L CaCO3	1	8/21/2015 7:03:20 PM	R28401
Carbonate (As CaCO3)	ND	2.000		mg/L CaCO3	1	8/21/2015 7:03:20 PM	R28401
Total Alkalinity (as CaCO3)	329.8	20.00		mg/L CaCO3	1	8/21/2015 7:03:20 PM	R28401
SM2540C MOD: TOTAL DISSOLVED SOLIDS							Analyst: KS
Total Dissolved Solids	3620	40.0	*D	mg/L	1	8/20/2015 3:44:00 PM	20886

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Analytical ReportLab Order: **1508875**Date Reported: **9/15/2015****Hall Environmental Analysis Laboratory, Inc.****CLIENT:** Western Refining Southwest, Inc.**Client Sample ID:** MW-53**Project:** RCRA Wells 8-18-15**Collection Date:** 8/18/2015 9:05:00 AM**Lab ID:** 1508875-003E**Matrix:** Aqueous

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 7470: MERCURY							Analyst: JLF
Mercury	ND	0.00020		mg/L	1	8/26/2015 4:19:03 PM	20989
EPA 6010B: TOTAL RECOVERABLE METALS							Analyst: MED
Arsenic	ND	0.020		mg/L	1	8/25/2015 1:14:12 PM	20922
Barium	0.051	0.020		mg/L	1	8/25/2015 1:14:12 PM	20922
Cadmium	ND	0.0020		mg/L	1	8/25/2015 1:14:12 PM	20922
Chromium	ND	0.0060		mg/L	1	8/25/2015 1:14:12 PM	20922
Lead	ND	0.0050		mg/L	1	8/25/2015 1:14:12 PM	20922
Selenium	ND	0.050		mg/L	1	8/25/2015 1:14:12 PM	20922
Silver	ND	0.0050		mg/L	1	8/25/2015 1:14:12 PM	20922

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order: 1508875

Date Reported: 9/15/2015

CLIENT: Western Refining Southwest, Inc.
Project: RCRA Wells 8-18-15
Lab ID: 1508875-003F

Client Sample ID: MW-53
Collection Date: 8/18/2015 9:05:00 AM
Matrix: Aqueous

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 7470: MERCURY							Analyst: JLF
Mercury	ND	0.00020		mg/L	1	8/26/2015 4:47:49 PM	20989
EPA METHOD 6010B: DISSOLVED METALS							Analyst: MED
Arsenic	ND	0.020		mg/L	1	8/24/2015 1:39:13 PM	B28416
Barium	ND	0.020		mg/L	1	8/24/2015 1:39:13 PM	B28416
Cadmium	ND	0.0020		mg/L	1	8/24/2015 1:39:13 PM	B28416
Calcium	390	10		mg/L	10	8/24/2015 4:16:30 PM	B28416
Chromium	ND	0.0060		mg/L	1	8/24/2015 1:39:13 PM	B28416
Copper	ND	0.0060		mg/L	1	8/24/2015 1:39:13 PM	B28416
Iron	ND	0.020		mg/L	1	8/24/2015 1:39:13 PM	B28416
Lead	ND	0.0050		mg/L	1	8/24/2015 1:39:13 PM	B28416
Magnesium	56	1.0		mg/L	1	8/25/2015 12:14:03 PM	A28442
Manganese	0.61	0.0020		mg/L	1	8/24/2015 1:39:13 PM	B28416
Potassium	5.0	1.0		mg/L	1	8/24/2015 1:39:13 PM	B28416
Selenium	ND	0.050		mg/L	1	8/24/2015 1:39:13 PM	B28416
Silver	ND	0.0050		mg/L	1	8/24/2015 1:39:13 PM	B28416
Sodium	780	10		mg/L	10	8/24/2015 4:16:30 PM	B28416
Uranium	ND	0.10		mg/L	1	8/24/2015 1:39:13 PM	B28416
Zinc	0.025	0.020		mg/L	1	8/24/2015 1:39:13 PM	B28416

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Analytical Report

Lab Order: 1508875

Date Reported: 9/15/2015

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Southwest, Inc.
Project: RCRA Wells 8-18-15
Lab ID: 1508875-004A

Client Sample ID: MW-52
Collection Date: 8/18/2015 8:30:00 AM
Matrix: Aqueous

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES				Analyst: DJF			
Benzene	ND	1.0		µg/L	1	8/20/2015 4:15:18 PM	R28360
Toluene	ND	1.0		µg/L	1	8/20/2015 4:15:18 PM	R28360
Ethylbenzene	ND	1.0		µg/L	1	8/20/2015 4:15:18 PM	R28360
Methyl tert-butyl ether (MTBE)	ND	1.0		µg/L	1	8/20/2015 4:15:18 PM	R28360
1,2,4-Trimethylbenzene	ND	1.0		µg/L	1	8/20/2015 4:15:18 PM	R28360
1,3,5-Trimethylbenzene	ND	1.0		µg/L	1	8/20/2015 4:15:18 PM	R28360
1,2-Dichloroethane (EDC)	ND	1.0		µg/L	1	8/20/2015 4:15:18 PM	R28360
1,2-Dibromoethane (EDB)	ND	1.0		µg/L	1	8/20/2015 4:15:18 PM	R28360
Naphthalene	ND	2.0		µg/L	1	8/20/2015 4:15:18 PM	R28360
1-Methylnaphthalene	ND	4.0		µg/L	1	8/20/2015 4:15:18 PM	R28360
2-Methylnaphthalene	ND	4.0		µg/L	1	8/20/2015 4:15:18 PM	R28360
Acetone	ND	10		µg/L	1	8/20/2015 4:15:18 PM	R28360
Bromobenzene	ND	1.0		µg/L	1	8/20/2015 4:15:18 PM	R28360
Bromodichloromethane	ND	1.0		µg/L	1	8/20/2015 4:15:18 PM	R28360
Bromoform	ND	1.0		µg/L	1	8/20/2015 4:15:18 PM	R28360
Bromomethane	ND	3.0		µg/L	1	8/20/2015 4:15:18 PM	R28360
2-Butanone	ND	10		µg/L	1	8/20/2015 4:15:18 PM	R28360
Carbon disulfide	ND	10		µg/L	1	8/20/2015 4:15:18 PM	R28360
Carbon Tetrachloride	ND	1.0		µg/L	1	8/20/2015 4:15:18 PM	R28360
Chlorobenzene	ND	1.0		µg/L	1	8/20/2015 4:15:18 PM	R28360
Chloroethane	ND	2.0		µg/L	1	8/20/2015 4:15:18 PM	R28360
Chloroform	ND	1.0		µg/L	1	8/20/2015 4:15:18 PM	R28360
Chloromethane	ND	3.0		µg/L	1	8/20/2015 4:15:18 PM	R28360
2-Chlorotoluene	ND	1.0		µg/L	1	8/20/2015 4:15:18 PM	R28360
4-Chlorotoluene	ND	1.0		µg/L	1	8/20/2015 4:15:18 PM	R28360
cis-1,2-DCE	ND	1.0		µg/L	1	8/20/2015 4:15:18 PM	R28360
cis-1,3-Dichloropropene	ND	1.0		µg/L	1	8/20/2015 4:15:18 PM	R28360
1,2-Dibromo-3-chloropropane	ND	2.0		µg/L	1	8/20/2015 4:15:18 PM	R28360
Dibromochloromethane	ND	1.0		µg/L	1	8/20/2015 4:15:18 PM	R28360
Dibromomethane	ND	1.0		µg/L	1	8/20/2015 4:15:18 PM	R28360
1,2-Dichlorobenzene	ND	1.0		µg/L	1	8/20/2015 4:15:18 PM	R28360
1,3-Dichlorobenzene	ND	1.0		µg/L	1	8/20/2015 4:15:18 PM	R28360
1,4-Dichlorobenzene	ND	1.0		µg/L	1	8/20/2015 4:15:18 PM	R28360
Dichlorodifluoromethane	ND	1.0		µg/L	1	8/20/2015 4:15:18 PM	R28360
1,1-Dichloroethane	ND	1.0		µg/L	1	8/20/2015 4:15:18 PM	R28360
1,1-Dichloroethene	ND	1.0		µg/L	1	8/20/2015 4:15:18 PM	R28360
1,2-Dichloropropane	ND	1.0		µg/L	1	8/20/2015 4:15:18 PM	R28360
1,3-Dichloropropane	ND	1.0		µg/L	1	8/20/2015 4:15:18 PM	R28360
2,2-Dichloropropane	ND	2.0		µg/L	1	8/20/2015 4:15:18 PM	R28360
1,1-Dichloropropene	ND	1.0		µg/L	1	8/20/2015 4:15:18 PM	R28360
Hexachlorobutadiene	ND	1.0		µg/L	1	8/20/2015 4:15:18 PM	R28360

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Analytical Report

Lab Order: 1508875

Hall Environmental Analysis Laboratory, Inc.

Date Reported: 9/15/2015

CLIENT: Western Refining Southwest, Inc.
Project: RCRA Wells 8-18-15
Lab ID: 1508875-004A

Client Sample ID: MW-52
Collection Date: 8/18/2015 8:30:00 AM
Matrix: Aqueous

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES				Analyst: DJF			
2-Hexanone	ND	10		µg/L	1	8/20/2015 4:15:18 PM	R28360
Isopropylbenzene	ND	1.0		µg/L	1	8/20/2015 4:15:18 PM	R28360
4-Isopropyltoluene	ND	1.0		µg/L	1	8/20/2015 4:15:18 PM	R28360
4-Methyl-2-pentanone	ND	10		µg/L	1	8/20/2015 4:15:18 PM	R28360
Methylene Chloride	ND	3.0		µg/L	1	8/20/2015 4:15:18 PM	R28360
n-Butylbenzene	ND	3.0		µg/L	1	8/20/2015 4:15:18 PM	R28360
n-Propylbenzene	ND	1.0		µg/L	1	8/20/2015 4:15:18 PM	R28360
sec-Butylbenzene	ND	1.0		µg/L	1	8/20/2015 4:15:18 PM	R28360
Styrene	ND	1.0		µg/L	1	8/20/2015 4:15:18 PM	R28360
tert-Butylbenzene	ND	1.0		µg/L	1	8/20/2015 4:15:18 PM	R28360
1,1,1,2-Tetrachloroethane	ND	1.0		µg/L	1	8/20/2015 4:15:18 PM	R28360
1,1,2,2-Tetrachloroethane	ND	2.0		µg/L	1	8/20/2015 4:15:18 PM	R28360
Tetrachloroethene (PCE)	ND	1.0		µg/L	1	8/20/2015 4:15:18 PM	R28360
trans-1,2-DCE	ND	1.0		µg/L	1	8/20/2015 4:15:18 PM	R28360
trans-1,3-Dichloropropene	ND	1.0		µg/L	1	8/20/2015 4:15:18 PM	R28360
1,2,3-Trichlorobenzene	ND	1.0		µg/L	1	8/20/2015 4:15:18 PM	R28360
1,2,4-Trichlorobenzene	ND	1.0		µg/L	1	8/20/2015 4:15:18 PM	R28360
1,1,1-Trichloroethane	ND	1.0		µg/L	1	8/20/2015 4:15:18 PM	R28360
1,1,2-Trichloroethane	ND	1.0		µg/L	1	8/20/2015 4:15:18 PM	R28360
Trichloroethene (TCE)	ND	1.0		µg/L	1	8/20/2015 4:15:18 PM	R28360
Trichlorofluoromethane	ND	1.0		µg/L	1	8/20/2015 4:15:18 PM	R28360
1,2,3-Trichloropropane	ND	2.0		µg/L	1	8/20/2015 4:15:18 PM	R28360
Vinyl chloride	ND	1.0		µg/L	1	8/20/2015 4:15:18 PM	R28360
Xylenes, Total	ND	1.5		µg/L	1	8/20/2015 4:15:18 PM	R28360
Surr: 1,2-Dichloroethane-d4	102	70-130		%REC	1	8/20/2015 4:15:18 PM	R28360
Surr: 4-Bromofluorobenzene	113	70-130		%REC	1	8/20/2015 4:15:18 PM	R28360
Surr: Dibromofluoromethane	115	70-130		%REC	1	8/20/2015 4:15:18 PM	R28360
Surr: Toluene-d8	98.3	70-130		%REC	1	8/20/2015 4:15:18 PM	R28360

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Analytical ReportLab Order: **1508875**Date Reported: **9/15/2015****Hall Environmental Analysis Laboratory, Inc.****CLIENT:** Western Refining Southwest, Inc.**Client Sample ID:** MW-52**Project:** RCRA Wells 8-18-15**Collection Date:** 8/18/2015 8:30:00 AM**Lab ID:** 1508875-004B**Matrix:** Aqueous

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D: GASOLINE RANGE							Analyst: DJF
Gasoline Range Organics (GRO)	ND	0.050		mg/L	1	8/20/2015 4:15:18 PM	C28360
Surr: BFB	102	70-130		%REC	1	8/20/2015 4:15:18 PM	C28360

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Analytical ReportLab Order: **1508875**Date Reported: **9/15/2015****Hall Environmental Analysis Laboratory, Inc.****CLIENT:** Western Refining Southwest, Inc.**Client Sample ID:** MW-52**Project:** RCRA Wells 8-18-15**Collection Date:** 8/18/2015 8:30:00 AM**Lab ID:** 1508875-004C**Matrix:** Aqueous

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D: DIESEL RANGE							Analyst: TOM
Diesel Range Organics (DRO)	ND	0.20		mg/L	1	8/19/2015 7:02:19 PM	20869
Motor Oil Range Organics (MRO)	ND	2.5		mg/L	1	8/19/2015 7:02:19 PM	20869
Surr: DNOP	109	84.6-165		%REC	1	8/19/2015 7:02:19 PM	20869

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order: 1508875

Date Reported: 9/15/2015

CLIENT: Western Refining Southwest, Inc.
Project: RCRA Wells 8-18-15
Lab ID: 1508875-004D

Client Sample ID: MW-52
Collection Date: 8/18/2015 8:30:00 AM
Matrix: Aqueous

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
CARBON DIOXIDE							Analyst: MRA
Total Carbon Dioxide	200	1.0	H	mg CO2/L	1	8/21/2015 7:26:36 PM	R28401
EPA METHOD 300.0: ANIONS							Analyst: LGT
Fluoride	0.44	0.10		mg/L	1	8/19/2015 8:20:23 PM	R28334
Chloride	560	50	*	mg/L	100	8/25/2015 2:00:24 AM	R28432
Nitrogen, Nitrite (As N)	ND	2.0		mg/L	20	8/19/2015 8:32:47 PM	R28334
Bromide	2.2	0.10		mg/L	1	8/19/2015 8:20:23 PM	R28334
Nitrogen, Nitrate (As N)	19	2.0	*	mg/L	20	8/19/2015 8:32:47 PM	R28334
Phosphorus, Orthophosphate (As P)	ND	10		mg/L	20	8/19/2015 8:32:47 PM	R28334
Sulfate	1100	50	*	mg/L	100	8/25/2015 2:00:24 AM	R28432
SM2510B: SPECIFIC CONDUCTANCE							Analyst: MRA
Conductivity	4100	0.010		µmhos/cm	1	8/21/2015 7:26:36 PM	R28401
SM2320B: ALKALINITY							Analyst: MRA
Bicarbonate (As CaCO3)	207.5	20.00		mg/L CaCO3	1	8/21/2015 7:26:36 PM	R28401
Carbonate (As CaCO3)	ND	2.000		mg/L CaCO3	1	8/21/2015 7:26:36 PM	R28401
Total Alkalinity (as CaCO3)	207.5	20.00		mg/L CaCO3	1	8/21/2015 7:26:36 PM	R28401
SM2540C MOD: TOTAL DISSOLVED SOLIDS							Analyst: KS
Total Dissolved Solids	3060	40.0	*D	mg/L	1	8/20/2015 3:44:00 PM	20886

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order: 1508875

Date Reported: 9/15/2015

CLIENT: Western Refining Southwest, Inc.
Project: RCRA Wells 8-18-15
Lab ID: 1508875-004E

Client Sample ID: MW-52
Collection Date: 8/18/2015 8:30:00 AM
Matrix: Aqueous

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 7470: MERCURY							Analyst: JLF
Mercury	ND	0.00020		mg/L	1	8/26/2015 4:21:10 PM	20989
EPA 6010B: TOTAL RECOVERABLE METALS							Analyst: MED
Arsenic	ND	0.020		mg/L	1	8/25/2015 1:19:40 PM	20922
Barium	0.099	0.020		mg/L	1	8/25/2015 1:19:40 PM	20922
Cadmium	ND	0.0020		mg/L	1	8/25/2015 1:19:40 PM	20922
Chromium	ND	0.0060		mg/L	1	8/25/2015 1:19:40 PM	20922
Lead	ND	0.0050		mg/L	1	8/25/2015 1:19:40 PM	20922
Selenium	0.069	0.050		mg/L	1	8/25/2015 1:19:40 PM	20922
Silver	ND	0.0050		mg/L	1	8/25/2015 1:19:40 PM	20922

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order: 1508875

Date Reported: 9/15/2015

CLIENT: Western Refining Southwest, Inc.
Project: RCRA Wells 8-18-15
Lab ID: 1508875-004F

Client Sample ID: MW-52
Collection Date: 8/18/2015 8:30:00 AM
Matrix: Aqueous

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 7470: MERCURY							Analyst: JLF
Mercury	ND	0.00020		mg/L	1	8/26/2015 4:49:54 PM	20989
EPA METHOD 6010B: DISSOLVED METALS							Analyst: MED
Arsenic	ND	0.020		mg/L	1	8/24/2015 1:41:05 PM	B28416
Barium	ND	0.020		mg/L	1	8/24/2015 1:41:05 PM	B28416
Cadmium	ND	0.0020		mg/L	1	8/24/2015 1:41:05 PM	B28416
Calcium	320	10		mg/L	10	8/24/2015 4:20:19 PM	B28416
Chromium	ND	0.0060		mg/L	1	8/24/2015 1:41:05 PM	B28416
Copper	ND	0.0060		mg/L	1	8/24/2015 1:41:05 PM	B28416
Iron	2.2	0.20		mg/L	10	8/24/2015 4:20:19 PM	B28416
Lead	ND	0.0050		mg/L	1	8/24/2015 1:41:05 PM	B28416
Magnesium	77	1.0		mg/L	1	8/25/2015 12:15:52 PM	A28442
Manganese	3.9	0.020		mg/L	10	8/24/2015 3:06:13 PM	B28416
Potassium	4.7	1.0		mg/L	1	8/24/2015 1:41:05 PM	B28416
Selenium	0.090	0.050		mg/L	1	8/24/2015 1:41:05 PM	B28416
Silver	ND	0.0050		mg/L	1	8/24/2015 1:41:05 PM	B28416
Sodium	560	10		mg/L	10	8/24/2015 3:06:13 PM	B28416
Uranium	ND	0.10		mg/L	1	8/24/2015 1:41:05 PM	B28416
Zinc	0.066	0.020		mg/L	1	8/24/2015 1:41:05 PM	B28416

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order: 1508875

Date Reported: 9/15/2015

CLIENT: Western Refining Southwest, Inc.
Project: RCRA Wells 8-18-15
Lab ID: 1508875-005A

Client Sample ID: MW-62
Collection Date: 8/18/2015 10:15:00 AM
Matrix: Aqueous

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES				Analyst: DJF			
Benzene	ND	1.0		µg/L	1	8/20/2015 4:42:53 PM	R28360
Toluene	ND	1.0		µg/L	1	8/20/2015 4:42:53 PM	R28360
Ethylbenzene	ND	1.0		µg/L	1	8/20/2015 4:42:53 PM	R28360
Methyl tert-butyl ether (MTBE)	ND	1.0		µg/L	1	8/20/2015 4:42:53 PM	R28360
1,2,4-Trimethylbenzene	ND	1.0		µg/L	1	8/20/2015 4:42:53 PM	R28360
1,3,5-Trimethylbenzene	ND	1.0		µg/L	1	8/20/2015 4:42:53 PM	R28360
1,2-Dichloroethane (EDC)	ND	1.0		µg/L	1	8/20/2015 4:42:53 PM	R28360
1,2-Dibromoethane (EDB)	ND	1.0		µg/L	1	8/20/2015 4:42:53 PM	R28360
Naphthalene	ND	2.0		µg/L	1	8/20/2015 4:42:53 PM	R28360
1-Methylnaphthalene	ND	4.0		µg/L	1	8/20/2015 4:42:53 PM	R28360
2-Methylnaphthalene	ND	4.0		µg/L	1	8/20/2015 4:42:53 PM	R28360
Acetone	ND	10		µg/L	1	8/20/2015 4:42:53 PM	R28360
Bromobenzene	ND	1.0		µg/L	1	8/20/2015 4:42:53 PM	R28360
Bromodichloromethane	ND	1.0		µg/L	1	8/20/2015 4:42:53 PM	R28360
Bromoform	ND	1.0		µg/L	1	8/20/2015 4:42:53 PM	R28360
Bromomethane	ND	3.0		µg/L	1	8/20/2015 4:42:53 PM	R28360
2-Butanone	ND	10		µg/L	1	8/20/2015 4:42:53 PM	R28360
Carbon disulfide	ND	10		µg/L	1	8/20/2015 4:42:53 PM	R28360
Carbon Tetrachloride	ND	1.0		µg/L	1	8/20/2015 4:42:53 PM	R28360
Chlorobenzene	ND	1.0		µg/L	1	8/20/2015 4:42:53 PM	R28360
Chloroethane	ND	2.0		µg/L	1	8/20/2015 4:42:53 PM	R28360
Chloroform	ND	1.0		µg/L	1	8/20/2015 4:42:53 PM	R28360
Chloromethane	ND	3.0		µg/L	1	8/20/2015 4:42:53 PM	R28360
2-Chlorotoluene	ND	1.0		µg/L	1	8/20/2015 4:42:53 PM	R28360
4-Chlorotoluene	ND	1.0		µg/L	1	8/20/2015 4:42:53 PM	R28360
cis-1,2-DCE	ND	1.0		µg/L	1	8/20/2015 4:42:53 PM	R28360
cis-1,3-Dichloropropene	ND	1.0		µg/L	1	8/20/2015 4:42:53 PM	R28360
1,2-Dibromo-3-chloropropane	ND	2.0		µg/L	1	8/20/2015 4:42:53 PM	R28360
Dibromochloromethane	ND	1.0		µg/L	1	8/20/2015 4:42:53 PM	R28360
Dibromomethane	ND	1.0		µg/L	1	8/20/2015 4:42:53 PM	R28360
1,2-Dichlorobenzene	ND	1.0		µg/L	1	8/20/2015 4:42:53 PM	R28360
1,3-Dichlorobenzene	ND	1.0		µg/L	1	8/20/2015 4:42:53 PM	R28360
1,4-Dichlorobenzene	ND	1.0		µg/L	1	8/20/2015 4:42:53 PM	R28360
Dichlorodifluoromethane	ND	1.0		µg/L	1	8/20/2015 4:42:53 PM	R28360
1,1-Dichloroethane	ND	1.0		µg/L	1	8/20/2015 4:42:53 PM	R28360
1,1-Dichloroethene	ND	1.0		µg/L	1	8/20/2015 4:42:53 PM	R28360
1,2-Dichloropropane	ND	1.0		µg/L	1	8/20/2015 4:42:53 PM	R28360
1,3-Dichloropropane	ND	1.0		µg/L	1	8/20/2015 4:42:53 PM	R28360
2,2-Dichloropropane	ND	2.0		µg/L	1	8/20/2015 4:42:53 PM	R28360
1,1-Dichloropropene	ND	1.0		µg/L	1	8/20/2015 4:42:53 PM	R28360
Hexachlorobutadiene	ND	1.0		µg/L	1	8/20/2015 4:42:53 PM	R28360

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Analytical Report

Lab Order: 1508875

Hall Environmental Analysis Laboratory, Inc.

Date Reported: 9/15/2015

CLIENT: Western Refining Southwest, Inc.
Project: RCRA Wells 8-18-15
Lab ID: 1508875-005A

Client Sample ID: MW-62
Collection Date: 8/18/2015 10:15:00 AM
Matrix: Aqueous

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES				Analyst: DJF			
2-Hexanone	ND	10		µg/L	1	8/20/2015 4:42:53 PM	R28360
Isopropylbenzene	ND	1.0		µg/L	1	8/20/2015 4:42:53 PM	R28360
4-Isopropyltoluene	ND	1.0		µg/L	1	8/20/2015 4:42:53 PM	R28360
4-Methyl-2-pentanone	ND	10		µg/L	1	8/20/2015 4:42:53 PM	R28360
Methylene Chloride	ND	3.0		µg/L	1	8/20/2015 4:42:53 PM	R28360
n-Butylbenzene	ND	3.0		µg/L	1	8/20/2015 4:42:53 PM	R28360
n-Propylbenzene	ND	1.0		µg/L	1	8/20/2015 4:42:53 PM	R28360
sec-Butylbenzene	ND	1.0		µg/L	1	8/20/2015 4:42:53 PM	R28360
Styrene	ND	1.0		µg/L	1	8/20/2015 4:42:53 PM	R28360
tert-Butylbenzene	ND	1.0		µg/L	1	8/20/2015 4:42:53 PM	R28360
1,1,1,2-Tetrachloroethane	ND	1.0		µg/L	1	8/20/2015 4:42:53 PM	R28360
1,1,2,2-Tetrachloroethane	ND	2.0		µg/L	1	8/20/2015 4:42:53 PM	R28360
Tetrachloroethene (PCE)	ND	1.0		µg/L	1	8/20/2015 4:42:53 PM	R28360
trans-1,2-DCE	ND	1.0		µg/L	1	8/20/2015 4:42:53 PM	R28360
trans-1,3-Dichloropropene	ND	1.0		µg/L	1	8/20/2015 4:42:53 PM	R28360
1,2,3-Trichlorobenzene	ND	1.0		µg/L	1	8/20/2015 4:42:53 PM	R28360
1,2,4-Trichlorobenzene	ND	1.0		µg/L	1	8/20/2015 4:42:53 PM	R28360
1,1,1-Trichloroethane	ND	1.0		µg/L	1	8/20/2015 4:42:53 PM	R28360
1,1,2-Trichloroethane	ND	1.0		µg/L	1	8/20/2015 4:42:53 PM	R28360
Trichloroethene (TCE)	ND	1.0		µg/L	1	8/20/2015 4:42:53 PM	R28360
Trichlorofluoromethane	ND	1.0		µg/L	1	8/20/2015 4:42:53 PM	R28360
1,2,3-Trichloropropane	ND	2.0		µg/L	1	8/20/2015 4:42:53 PM	R28360
Vinyl chloride	ND	1.0		µg/L	1	8/20/2015 4:42:53 PM	R28360
Xylenes, Total	ND	1.5		µg/L	1	8/20/2015 4:42:53 PM	R28360
Surr: 1,2-Dichloroethane-d4	102	70-130		%REC	1	8/20/2015 4:42:53 PM	R28360
Surr: 4-Bromofluorobenzene	111	70-130		%REC	1	8/20/2015 4:42:53 PM	R28360
Surr: Dibromofluoromethane	116	70-130		%REC	1	8/20/2015 4:42:53 PM	R28360
Surr: Toluene-d8	95.1	70-130		%REC	1	8/20/2015 4:42:53 PM	R28360

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
				Page 30 of 105

Analytical ReportLab Order: **1508875**Date Reported: **9/15/2015****Hall Environmental Analysis Laboratory, Inc.****CLIENT:** Western Refining Southwest, Inc.**Client Sample ID:** MW-62**Project:** RCRA Wells 8-18-15**Collection Date:** 8/18/2015 10:15:00 AM**Lab ID:** 1508875-005B**Matrix:** Aqueous

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D: GASOLINE RANGE							Analyst: DJF
Gasoline Range Organics (GRO)	ND	0.050		mg/L	1	8/20/2015 4:42:53 PM	C28360
Surr: BFB	102	70-130		%REC	1	8/20/2015 4:42:53 PM	C28360

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Analytical ReportLab Order: **1508875**Date Reported: **9/15/2015****Hall Environmental Analysis Laboratory, Inc.****CLIENT:** Western Refining Southwest, Inc.**Client Sample ID:** MW-62**Project:** RCRA Wells 8-18-15**Collection Date:** 8/18/2015 10:15:00 AM**Lab ID:** 1508875-005C**Matrix:** Aqueous

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D: DIESEL RANGE							Analyst: TOM
Diesel Range Organics (DRO)	ND	0.20		mg/L	1	8/19/2015 7:23:46 PM	20869
Motor Oil Range Organics (MRO)	ND	2.5		mg/L	1	8/19/2015 7:23:46 PM	20869
Surr: DNOP	96.9	84.6-165		%REC	1	8/19/2015 7:23:46 PM	20869

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order: 1508875

Date Reported: 9/15/2015

CLIENT: Western Refining Southwest, Inc.
Project: RCRA Wells 8-18-15
Lab ID: 1508875-005D

Client Sample ID: MW-62
Collection Date: 8/18/2015 10:15:00 AM
Matrix: Aqueous

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
CARBON DIOXIDE							Analyst: MRA
Total Carbon Dioxide	520	1.0	H	mg CO2/L	1	8/21/2015 7:38:56 PM	R28401
EPA METHOD 300.0: ANIONS							Analyst: LGT
Fluoride	ND	0.10		mg/L	1	8/19/2015 8:45:11 PM	R28334
Chloride	14	0.50		mg/L	1	8/19/2015 8:45:11 PM	R28334
Nitrogen, Nitrite (As N)	ND	0.10		mg/L	1	8/19/2015 8:45:11 PM	R28334
Bromide	ND	0.10		mg/L	1	8/19/2015 8:45:11 PM	R28334
Nitrogen, Nitrate (As N)	ND	0.10		mg/L	1	8/19/2015 8:45:11 PM	R28334
Phosphorus, Orthophosphate (As P)	ND	10		mg/L	20	8/19/2015 8:57:36 PM	R28334
Sulfate	4000	50	*	mg/L	100	8/25/2015 2:12:48 AM	R28432
SM2510B: SPECIFIC CONDUCTANCE							Analyst: MRA
Conductivity	6700	0.010		µmhos/cm	1	8/21/2015 7:38:56 PM	R28401
SM2320B: ALKALINITY							Analyst: MRA
Bicarbonate (As CaCO3)	573.9	20.00		mg/L CaCO3	1	8/21/2015 7:38:56 PM	R28401
Carbonate (As CaCO3)	ND	2.000		mg/L CaCO3	1	8/21/2015 7:38:56 PM	R28401
Total Alkalinity (as CaCO3)	573.9	20.00		mg/L CaCO3	1	8/21/2015 7:38:56 PM	R28401
SM2540C MOD: TOTAL DISSOLVED SOLIDS							Analyst: KS
Total Dissolved Solids	6040	40.0	*D	mg/L	1	8/20/2015 3:44:00 PM	20886

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Analytical ReportLab Order: **1508875**Date Reported: **9/15/2015****Hall Environmental Analysis Laboratory, Inc.****CLIENT:** Western Refining Southwest, Inc.**Client Sample ID:** MW-62**Project:** RCRA Wells 8-18-15**Collection Date:** 8/18/2015 10:15:00 AM**Lab ID:** 1508875-005E**Matrix:** Aqueous

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 7470: MERCURY							Analyst: JLF
Mercury	ND	0.00020		mg/L	1	8/26/2015 4:23:10 PM	20989
EPA 6010B: TOTAL RECOVERABLE METALS							Analyst: MED
Arsenic	ND	0.020		mg/L	1	8/25/2015 1:28:10 PM	20922
Barium	ND	0.020		mg/L	1	8/25/2015 1:28:10 PM	20922
Cadmium	ND	0.0020		mg/L	1	8/25/2015 1:28:10 PM	20922
Chromium	ND	0.0060		mg/L	1	8/25/2015 1:28:10 PM	20922
Lead	ND	0.0050		mg/L	1	8/25/2015 1:28:10 PM	20922
Selenium	ND	0.050		mg/L	1	8/25/2015 1:28:10 PM	20922
Silver	ND	0.0050		mg/L	1	8/25/2015 1:28:10 PM	20922

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Analytical ReportLab Order: **1508875**Date Reported: **9/15/2015****Hall Environmental Analysis Laboratory, Inc.**

CLIENT: Western Refining Southwest, Inc.
Project: RCRA Wells 8-18-15
Lab ID: 1508875-005F

Client Sample ID: MW-62
Collection Date: 8/18/2015 10:15:00 AM
Matrix: Aqueous

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 7470: MERCURY							Analyst: JLF
Mercury	ND	0.00020		mg/L	1	8/26/2015 4:51:59 PM	20989
EPA METHOD 6010B: DISSOLVED METALS							Analyst: MED
Arsenic	ND	0.020		mg/L	1	8/24/2015 1:42:44 PM	B28416
Barium	ND	0.020		mg/L	1	8/24/2015 1:42:44 PM	B28416
Cadmium	ND	0.0020		mg/L	1	8/24/2015 1:42:44 PM	B28416
Calcium	470	10		mg/L	10	8/24/2015 4:24:02 PM	B28416
Chromium	ND	0.0060		mg/L	1	8/24/2015 1:42:44 PM	B28416
Copper	ND	0.0060		mg/L	1	8/24/2015 1:42:44 PM	B28416
Iron	0.15	0.020		mg/L	1	8/24/2015 1:42:44 PM	B28416
Lead	ND	0.0050		mg/L	1	8/24/2015 1:42:44 PM	B28416
Magnesium	38	1.0		mg/L	1	8/25/2015 12:17:32 PM	A28442
Manganese	1.4	0.0040		mg/L	2	8/24/2015 3:08:09 PM	B28416
Potassium	9.5	1.0		mg/L	1	8/24/2015 1:42:44 PM	B28416
Selenium	ND	0.050		mg/L	1	8/24/2015 1:42:44 PM	B28416
Silver	ND	0.0050		mg/L	1	8/24/2015 1:42:44 PM	B28416
Sodium	1500	50		mg/L	50	8/24/2015 3:11:55 PM	B28416
Uranium	ND	0.10		mg/L	1	8/24/2015 1:42:44 PM	B28416
Zinc	0.028	0.020		mg/L	1	8/24/2015 1:42:44 PM	B28416

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Analytical Report

Lab Order: 1508875

Hall Environmental Analysis Laboratory, Inc.

Date Reported: 9/15/2015

CLIENT: Western Refining Southwest, Inc.
Project: RCRA Wells 8-18-15
Lab ID: 1508875-006A

Client Sample ID: MW-63
Collection Date: 8/18/2015 9:35:00 AM
Matrix: Aqueous

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES				Analyst: DJF			
Benzene	ND	1.0		µg/L	1	8/20/2015 5:10:25 PM	R28360
Toluene	ND	1.0		µg/L	1	8/20/2015 5:10:25 PM	R28360
Ethylbenzene	ND	1.0		µg/L	1	8/20/2015 5:10:25 PM	R28360
Methyl tert-butyl ether (MTBE)	4.0	1.0		µg/L	1	8/20/2015 5:10:25 PM	R28360
1,2,4-Trimethylbenzene	ND	1.0		µg/L	1	8/20/2015 5:10:25 PM	R28360
1,3,5-Trimethylbenzene	ND	1.0		µg/L	1	8/20/2015 5:10:25 PM	R28360
1,2-Dichloroethane (EDC)	ND	1.0		µg/L	1	8/20/2015 5:10:25 PM	R28360
1,2-Dibromoethane (EDB)	ND	1.0		µg/L	1	8/20/2015 5:10:25 PM	R28360
Naphthalene	ND	2.0		µg/L	1	8/20/2015 5:10:25 PM	R28360
1-Methylnaphthalene	ND	4.0		µg/L	1	8/20/2015 5:10:25 PM	R28360
2-Methylnaphthalene	ND	4.0		µg/L	1	8/20/2015 5:10:25 PM	R28360
Acetone	ND	10		µg/L	1	8/20/2015 5:10:25 PM	R28360
Bromobenzene	ND	1.0		µg/L	1	8/20/2015 5:10:25 PM	R28360
Bromodichloromethane	ND	1.0		µg/L	1	8/20/2015 5:10:25 PM	R28360
Bromoform	ND	1.0		µg/L	1	8/20/2015 5:10:25 PM	R28360
Bromomethane	ND	3.0		µg/L	1	8/20/2015 5:10:25 PM	R28360
2-Butanone	ND	10		µg/L	1	8/20/2015 5:10:25 PM	R28360
Carbon disulfide	ND	10		µg/L	1	8/20/2015 5:10:25 PM	R28360
Carbon Tetrachloride	ND	1.0		µg/L	1	8/20/2015 5:10:25 PM	R28360
Chlorobenzene	ND	1.0		µg/L	1	8/20/2015 5:10:25 PM	R28360
Chloroethane	ND	2.0		µg/L	1	8/20/2015 5:10:25 PM	R28360
Chloroform	ND	1.0		µg/L	1	8/20/2015 5:10:25 PM	R28360
Chloromethane	ND	3.0		µg/L	1	8/20/2015 5:10:25 PM	R28360
2-Chlorotoluene	ND	1.0		µg/L	1	8/20/2015 5:10:25 PM	R28360
4-Chlorotoluene	ND	1.0		µg/L	1	8/20/2015 5:10:25 PM	R28360
cis-1,2-DCE	ND	1.0		µg/L	1	8/20/2015 5:10:25 PM	R28360
cis-1,3-Dichloropropene	ND	1.0		µg/L	1	8/20/2015 5:10:25 PM	R28360
1,2-Dibromo-3-chloropropane	ND	2.0		µg/L	1	8/20/2015 5:10:25 PM	R28360
Dibromochloromethane	ND	1.0		µg/L	1	8/20/2015 5:10:25 PM	R28360
Dibromomethane	ND	1.0		µg/L	1	8/20/2015 5:10:25 PM	R28360
1,2-Dichlorobenzene	ND	1.0		µg/L	1	8/20/2015 5:10:25 PM	R28360
1,3-Dichlorobenzene	ND	1.0		µg/L	1	8/20/2015 5:10:25 PM	R28360
1,4-Dichlorobenzene	ND	1.0		µg/L	1	8/20/2015 5:10:25 PM	R28360
Dichlorodifluoromethane	ND	1.0		µg/L	1	8/20/2015 5:10:25 PM	R28360
1,1-Dichloroethane	ND	1.0		µg/L	1	8/20/2015 5:10:25 PM	R28360
1,1-Dichloroethene	ND	1.0		µg/L	1	8/20/2015 5:10:25 PM	R28360
1,2-Dichloropropane	ND	1.0		µg/L	1	8/20/2015 5:10:25 PM	R28360
1,3-Dichloropropane	ND	1.0		µg/L	1	8/20/2015 5:10:25 PM	R28360
2,2-Dichloropropane	ND	2.0		µg/L	1	8/20/2015 5:10:25 PM	R28360
1,1-Dichloropropene	ND	1.0		µg/L	1	8/20/2015 5:10:25 PM	R28360
Hexachlorobutadiene	ND	1.0		µg/L	1	8/20/2015 5:10:25 PM	R28360

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Analytical Report

Lab Order: 1508875

Date Reported: 9/15/2015

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Southwest, Inc.
Project: RCRA Wells 8-18-15
Lab ID: 1508875-006A

Client Sample ID: MW-63
Collection Date: 8/18/2015 9:35:00 AM
Matrix: Aqueous

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES				Analyst: DJF			
2-Hexanone	ND	10		µg/L	1	8/20/2015 5:10:25 PM	R28360
Isopropylbenzene	ND	1.0		µg/L	1	8/20/2015 5:10:25 PM	R28360
4-Isopropyltoluene	ND	1.0		µg/L	1	8/20/2015 5:10:25 PM	R28360
4-Methyl-2-pentanone	ND	10		µg/L	1	8/20/2015 5:10:25 PM	R28360
Methylene Chloride	ND	3.0		µg/L	1	8/20/2015 5:10:25 PM	R28360
n-Butylbenzene	ND	3.0		µg/L	1	8/20/2015 5:10:25 PM	R28360
n-Propylbenzene	ND	1.0		µg/L	1	8/20/2015 5:10:25 PM	R28360
sec-Butylbenzene	ND	1.0		µg/L	1	8/20/2015 5:10:25 PM	R28360
Styrene	ND	1.0		µg/L	1	8/20/2015 5:10:25 PM	R28360
tert-Butylbenzene	ND	1.0		µg/L	1	8/20/2015 5:10:25 PM	R28360
1,1,1,2-Tetrachloroethane	ND	1.0		µg/L	1	8/20/2015 5:10:25 PM	R28360
1,1,2,2-Tetrachloroethane	ND	2.0		µg/L	1	8/20/2015 5:10:25 PM	R28360
Tetrachloroethene (PCE)	ND	1.0		µg/L	1	8/20/2015 5:10:25 PM	R28360
trans-1,2-DCE	ND	1.0		µg/L	1	8/20/2015 5:10:25 PM	R28360
trans-1,3-Dichloropropene	ND	1.0		µg/L	1	8/20/2015 5:10:25 PM	R28360
1,2,3-Trichlorobenzene	ND	1.0		µg/L	1	8/20/2015 5:10:25 PM	R28360
1,2,4-Trichlorobenzene	ND	1.0		µg/L	1	8/20/2015 5:10:25 PM	R28360
1,1,1-Trichloroethane	ND	1.0		µg/L	1	8/20/2015 5:10:25 PM	R28360
1,1,2-Trichloroethane	ND	1.0		µg/L	1	8/20/2015 5:10:25 PM	R28360
Trichloroethene (TCE)	ND	1.0		µg/L	1	8/20/2015 5:10:25 PM	R28360
Trichlorofluoromethane	ND	1.0		µg/L	1	8/20/2015 5:10:25 PM	R28360
1,2,3-Trichloropropane	ND	2.0		µg/L	1	8/20/2015 5:10:25 PM	R28360
Vinyl chloride	ND	1.0		µg/L	1	8/20/2015 5:10:25 PM	R28360
Xylenes, Total	ND	1.5		µg/L	1	8/20/2015 5:10:25 PM	R28360
Surr: 1,2-Dichloroethane-d4	100	70-130		%REC	1	8/20/2015 5:10:25 PM	R28360
Surr: 4-Bromofluorobenzene	106	70-130		%REC	1	8/20/2015 5:10:25 PM	R28360
Surr: Dibromofluoromethane	117	70-130		%REC	1	8/20/2015 5:10:25 PM	R28360
Surr: Toluene-d8	100	70-130		%REC	1	8/20/2015 5:10:25 PM	R28360

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
				Page 37 of 105

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order: 1508875

Date Reported: 9/15/2015

CLIENT: Western Refining Southwest, Inc.
Project: RCRA Wells 8-18-15
Lab ID: 1508875-006B

Client Sample ID: MW-63
Collection Date: 8/18/2015 9:35:00 AM
Matrix: Aqueous

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D: GASOLINE RANGE							Analyst: DJF
Gasoline Range Organics (GRO)	ND	0.050		mg/L	1	8/20/2015 5:10:25 PM	C28360
Surr: BFB	102	70-130		%REC	1	8/20/2015 5:10:25 PM	C28360

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Analytical ReportLab Order: **1508875**Date Reported: **9/15/2015****Hall Environmental Analysis Laboratory, Inc.****CLIENT:** Western Refining Southwest, Inc.**Client Sample ID:** MW-63**Project:** RCRA Wells 8-18-15**Collection Date:** 8/18/2015 9:35:00 AM**Lab ID:** 1508875-006C**Matrix:** Aqueous

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D: DIESEL RANGE							Analyst: TOM
Diesel Range Organics (DRO)	ND	0.20		mg/L	1	8/19/2015 7:45:04 PM	20869
Motor Oil Range Organics (MRO)	ND	2.5		mg/L	1	8/19/2015 7:45:04 PM	20869
Surr: DNOP	109	84.6-165		%REC	1	8/19/2015 7:45:04 PM	20869

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order: 1508875

Date Reported: 9/15/2015

CLIENT: Western Refining Southwest, Inc.
Project: RCRA Wells 8-18-15
Lab ID: 1508875-006D

Client Sample ID: MW-63
Collection Date: 8/18/2015 9:35:00 AM
Matrix: Aqueous

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
CARBON DIOXIDE							Analyst: MRA
Total Carbon Dioxide	480	1.0	H	mg CO2/L	1	8/21/2015 8:01:42 PM	R28401
EPA METHOD 300.0: ANIONS							Analyst: LGT
Fluoride	ND	0.10		mg/L	1	8/19/2015 9:10:00 PM	R28334
Chloride	270	10	*	mg/L	20	8/19/2015 9:22:24 PM	R28334
Nitrogen, Nitrite (As N)	ND	0.10		mg/L	1	8/19/2015 9:10:00 PM	R28334
Bromide	4.0	2.0		mg/L	20	8/19/2015 9:22:24 PM	R28334
Nitrogen, Nitrate (As N)	78	2.0	*	mg/L	20	8/19/2015 9:22:24 PM	R28334
Phosphorus, Orthophosphate (As P)	ND	10		mg/L	20	8/19/2015 9:22:24 PM	R28334
Sulfate	1700	50	*	mg/L	100	8/25/2015 2:50:02 AM	R28432
SM2510B: SPECIFIC CONDUCTANCE							Analyst: MRA
Conductivity	4500	0.010		µmhos/cm	1	8/21/2015 8:01:42 PM	R28401
SM2320B: ALKALINITY							Analyst: MRA
Bicarbonate (As CaCO3)	522.5	20.00		mg/L CaCO3	1	8/21/2015 8:01:42 PM	R28401
Carbonate (As CaCO3)	ND	2.000		mg/L CaCO3	1	8/21/2015 8:01:42 PM	R28401
Total Alkalinity (as CaCO3)	522.5	20.00		mg/L CaCO3	1	8/21/2015 8:01:42 PM	R28401
SM2540C MOD: TOTAL DISSOLVED SOLIDS							Analyst: KS
Total Dissolved Solids	4080	20.0	*	mg/L	1	8/20/2015 3:44:00 PM	20886

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
				Page 40 of 105

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order: 1508875

Date Reported: 9/15/2015

CLIENT: Western Refining Southwest, Inc.
Project: RCRA Wells 8-18-15
Lab ID: 1508875-006E

Client Sample ID: MW-63
Collection Date: 8/18/2015 9:35:00 AM
Matrix: Aqueous

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 7470: MERCURY							Analyst: JLF
Mercury	ND	0.00020		mg/L	1	8/26/2015 4:25:10 PM	20989
EPA 6010B: TOTAL RECOVERABLE METALS							Analyst: MED
Arsenic	ND	0.020		mg/L	1	8/25/2015 1:30:07 PM	20922
Barium	ND	0.020		mg/L	1	8/25/2015 1:30:07 PM	20922
Cadmium	ND	0.0020		mg/L	1	8/25/2015 1:30:07 PM	20922
Chromium	ND	0.0060		mg/L	1	8/25/2015 1:30:07 PM	20922
Lead	ND	0.0050		mg/L	1	8/25/2015 1:30:07 PM	20922
Selenium	ND	0.050		mg/L	1	8/25/2015 1:30:07 PM	20922
Silver	ND	0.0050		mg/L	1	8/25/2015 1:30:07 PM	20922

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order: 1508875

Date Reported: 9/15/2015

CLIENT: Western Refining Southwest, Inc.
Project: RCRA Wells 8-18-15
Lab ID: 1508875-006F

Client Sample ID: MW-63
Collection Date: 8/18/2015 9:35:00 AM
Matrix: Aqueous

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 7470: MERCURY							Analyst: JLF
Mercury	ND	0.00020		mg/L	1	8/27/2015 4:21:24 PM	21012
EPA METHOD 6010B: DISSOLVED METALS							Analyst: MED
Arsenic	ND	0.020		mg/L	1	8/24/2015 1:54:21 PM	B28416
Barium	ND	0.020		mg/L	1	8/24/2015 1:54:21 PM	B28416
Cadmium	ND	0.0020		mg/L	1	8/24/2015 1:54:21 PM	B28416
Calcium	470	10		mg/L	10	8/24/2015 4:27:48 PM	B28416
Chromium	ND	0.0060		mg/L	1	8/24/2015 1:54:21 PM	B28416
Copper	ND	0.0060		mg/L	1	8/24/2015 1:54:21 PM	B28416
Iron	ND	0.020		mg/L	1	8/24/2015 1:54:21 PM	B28416
Lead	ND	0.0050		mg/L	1	8/24/2015 1:54:21 PM	B28416
Magnesium	130	5.0		mg/L	5	8/25/2015 12:23:41 PM	A28442
Manganese	0.81	0.0020		mg/L	1	8/24/2015 1:54:21 PM	B28416
Potassium	4.6	1.0		mg/L	1	8/24/2015 1:54:21 PM	B28416
Selenium	ND	0.050		mg/L	1	8/24/2015 1:54:21 PM	B28416
Silver	ND	0.0050		mg/L	1	8/24/2015 1:54:21 PM	B28416
Sodium	580	10		mg/L	10	8/24/2015 3:13:45 PM	B28416
Uranium	ND	0.10		mg/L	1	8/24/2015 1:54:21 PM	B28416
Zinc	0.030	0.020		mg/L	1	8/24/2015 1:54:21 PM	B28416

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order: 1508875

Date Reported: 9/15/2015

CLIENT: Western Refining Southwest, Inc.
Project: RCRA Wells 8-18-15
Lab ID: 1508875-007A

Client Sample ID: MW-64
Collection Date: 8/18/2015 10:00:00 AM
Matrix: Aqueous

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES				Analyst: DJF			
Benzene	ND	2.0	D	µg/L	2	8/20/2015 5:37:57 PM	R28360
Toluene	ND	2.0	D	µg/L	2	8/20/2015 5:37:57 PM	R28360
Ethylbenzene	ND	2.0	D	µg/L	2	8/20/2015 5:37:57 PM	R28360
Methyl tert-butyl ether (MTBE)	ND	2.0	D	µg/L	2	8/20/2015 5:37:57 PM	R28360
1,2,4-Trimethylbenzene	ND	2.0	D	µg/L	2	8/20/2015 5:37:57 PM	R28360
1,3,5-Trimethylbenzene	ND	2.0	D	µg/L	2	8/20/2015 5:37:57 PM	R28360
1,2-Dichloroethane (EDC)	ND	2.0	D	µg/L	2	8/20/2015 5:37:57 PM	R28360
1,2-Dibromoethane (EDB)	ND	2.0	D	µg/L	2	8/20/2015 5:37:57 PM	R28360
Naphthalene	ND	4.0	D	µg/L	2	8/20/2015 5:37:57 PM	R28360
1-Methylnaphthalene	ND	8.0	D	µg/L	2	8/20/2015 5:37:57 PM	R28360
2-Methylnaphthalene	ND	8.0	D	µg/L	2	8/20/2015 5:37:57 PM	R28360
Acetone	ND	20	D	µg/L	2	8/20/2015 5:37:57 PM	R28360
Bromobenzene	ND	2.0	D	µg/L	2	8/20/2015 5:37:57 PM	R28360
Bromodichloromethane	ND	2.0	D	µg/L	2	8/20/2015 5:37:57 PM	R28360
Bromoform	ND	2.0	D	µg/L	2	8/20/2015 5:37:57 PM	R28360
Bromomethane	ND	6.0	D	µg/L	2	8/20/2015 5:37:57 PM	R28360
2-Butanone	ND	20	D	µg/L	2	8/20/2015 5:37:57 PM	R28360
Carbon disulfide	ND	20	D	µg/L	2	8/20/2015 5:37:57 PM	R28360
Carbon Tetrachloride	ND	2.0	D	µg/L	2	8/20/2015 5:37:57 PM	R28360
Chlorobenzene	ND	2.0	D	µg/L	2	8/20/2015 5:37:57 PM	R28360
Chloroethane	ND	4.0	D	µg/L	2	8/20/2015 5:37:57 PM	R28360
Chloroform	ND	2.0	D	µg/L	2	8/20/2015 5:37:57 PM	R28360
Chloromethane	ND	6.0	D	µg/L	2	8/20/2015 5:37:57 PM	R28360
2-Chlorotoluene	ND	2.0	D	µg/L	2	8/20/2015 5:37:57 PM	R28360
4-Chlorotoluene	ND	2.0	D	µg/L	2	8/20/2015 5:37:57 PM	R28360
cis-1,2-DCE	ND	2.0	D	µg/L	2	8/20/2015 5:37:57 PM	R28360
cis-1,3-Dichloropropene	ND	2.0	D	µg/L	2	8/20/2015 5:37:57 PM	R28360
1,2-Dibromo-3-chloropropane	ND	4.0	D	µg/L	2	8/20/2015 5:37:57 PM	R28360
Dibromochloromethane	ND	2.0	D	µg/L	2	8/20/2015 5:37:57 PM	R28360
Dibromomethane	ND	2.0	D	µg/L	2	8/20/2015 5:37:57 PM	R28360
1,2-Dichlorobenzene	ND	2.0	D	µg/L	2	8/20/2015 5:37:57 PM	R28360
1,3-Dichlorobenzene	ND	2.0	D	µg/L	2	8/20/2015 5:37:57 PM	R28360
1,4-Dichlorobenzene	ND	2.0	D	µg/L	2	8/20/2015 5:37:57 PM	R28360
Dichlorodifluoromethane	ND	2.0	D	µg/L	2	8/20/2015 5:37:57 PM	R28360
1,1-Dichloroethane	ND	2.0	D	µg/L	2	8/20/2015 5:37:57 PM	R28360
1,1-Dichloroethene	ND	2.0	D	µg/L	2	8/20/2015 5:37:57 PM	R28360
1,2-Dichloropropane	ND	2.0	D	µg/L	2	8/20/2015 5:37:57 PM	R28360
1,3-Dichloropropane	ND	2.0	D	µg/L	2	8/20/2015 5:37:57 PM	R28360
2,2-Dichloropropane	ND	4.0	D	µg/L	2	8/20/2015 5:37:57 PM	R28360
1,1-Dichloropropene	ND	2.0	D	µg/L	2	8/20/2015 5:37:57 PM	R28360
Hexachlorobutadiene	ND	2.0	D	µg/L	2	8/20/2015 5:37:57 PM	R28360

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Analytical Report

Lab Order: 1508875

Date Reported: 9/15/2015

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Southwest, Inc.
Project: RCRA Wells 8-18-15
Lab ID: 1508875-007A

Client Sample ID: MW-64
Collection Date: 8/18/2015 10:00:00 AM
Matrix: Aqueous

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: DJF
2-Hexanone	ND	20	D	µg/L	2	8/20/2015 5:37:57 PM	R28360
Isopropylbenzene	ND	2.0	D	µg/L	2	8/20/2015 5:37:57 PM	R28360
4-Isopropyltoluene	ND	2.0	D	µg/L	2	8/20/2015 5:37:57 PM	R28360
4-Methyl-2-pentanone	ND	20	D	µg/L	2	8/20/2015 5:37:57 PM	R28360
Methylene Chloride	ND	6.0	D	µg/L	2	8/20/2015 5:37:57 PM	R28360
n-Butylbenzene	ND	6.0	D	µg/L	2	8/20/2015 5:37:57 PM	R28360
n-Propylbenzene	ND	2.0	D	µg/L	2	8/20/2015 5:37:57 PM	R28360
sec-Butylbenzene	ND	2.0	D	µg/L	2	8/20/2015 5:37:57 PM	R28360
Styrene	ND	2.0	D	µg/L	2	8/20/2015 5:37:57 PM	R28360
tert-Butylbenzene	ND	2.0	D	µg/L	2	8/20/2015 5:37:57 PM	R28360
1,1,1,2-Tetrachloroethane	ND	2.0	D	µg/L	2	8/20/2015 5:37:57 PM	R28360
1,1,2,2-Tetrachloroethane	ND	4.0	D	µg/L	2	8/20/2015 5:37:57 PM	R28360
Tetrachloroethene (PCE)	ND	2.0	D	µg/L	2	8/20/2015 5:37:57 PM	R28360
trans-1,2-DCE	ND	2.0	D	µg/L	2	8/20/2015 5:37:57 PM	R28360
trans-1,3-Dichloropropene	ND	2.0	D	µg/L	2	8/20/2015 5:37:57 PM	R28360
1,2,3-Trichlorobenzene	ND	2.0	D	µg/L	2	8/20/2015 5:37:57 PM	R28360
1,2,4-Trichlorobenzene	ND	2.0	D	µg/L	2	8/20/2015 5:37:57 PM	R28360
1,1,1-Trichloroethane	ND	2.0	D	µg/L	2	8/20/2015 5:37:57 PM	R28360
1,1,2-Trichloroethane	ND	2.0	D	µg/L	2	8/20/2015 5:37:57 PM	R28360
Trichloroethene (TCE)	ND	2.0	D	µg/L	2	8/20/2015 5:37:57 PM	R28360
Trichlorofluoromethane	ND	2.0	D	µg/L	2	8/20/2015 5:37:57 PM	R28360
1,2,3-Trichloropropane	ND	4.0	D	µg/L	2	8/20/2015 5:37:57 PM	R28360
Vinyl chloride	ND	2.0	D	µg/L	2	8/20/2015 5:37:57 PM	R28360
Xylenes, Total	ND	3.0	D	µg/L	2	8/20/2015 5:37:57 PM	R28360
Surr: 1,2-Dichloroethane-d4	101	70-130	D	%REC	2	8/20/2015 5:37:57 PM	R28360
Surr: 4-Bromofluorobenzene	111	70-130	D	%REC	2	8/20/2015 5:37:57 PM	R28360
Surr: Dibromofluoromethane	117	70-130	D	%REC	2	8/20/2015 5:37:57 PM	R28360
Surr: Toluene-d8	98.0	70-130	D	%REC	2	8/20/2015 5:37:57 PM	R28360

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order: 1508875

Date Reported: 9/15/2015

CLIENT: Western Refining Southwest, Inc.
Project: RCRA Wells 8-18-15
Lab ID: 1508875-007B

Client Sample ID: MW-64
Collection Date: 8/18/2015 10:00:00 AM
Matrix: Aqueous

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D: GASOLINE RANGE							Analyst: DJF
Gasoline Range Organics (GRO)	ND	0.10		mg/L	2	8/20/2015 5:37:57 PM	C28360
Surr: BFB	99.8	70-130		%REC	2	8/20/2015 5:37:57 PM	C28360

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Analytical ReportLab Order: **1508875**Date Reported: **9/15/2015****Hall Environmental Analysis Laboratory, Inc.****CLIENT:** Western Refining Southwest, Inc.**Client Sample ID:** MW-64**Project:** RCRA Wells 8-18-15**Collection Date:** 8/18/2015 10:00:00 AM**Lab ID:** 1508875-007C**Matrix:** Aqueous

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D: DIESEL RANGE							Analyst: TOM
Diesel Range Organics (DRO)	ND	0.20		mg/L	1	8/19/2015 8:06:30 PM	20869
Motor Oil Range Organics (MRO)	ND	2.5		mg/L	1	8/19/2015 8:06:30 PM	20869
Surr: DNOP	113	84.6-165		%REC	1	8/19/2015 8:06:30 PM	20869

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order: 1508875

Date Reported: 9/15/2015

CLIENT: Western Refining Southwest, Inc.
Project: RCRA Wells 8-18-15
Lab ID: 1508875-007D

Client Sample ID: MW-64
Collection Date: 8/18/2015 10:00:00 AM
Matrix: Aqueous

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
CARBON DIOXIDE							Analyst: MRA
Total Carbon Dioxide	260	1.0	H	mg CO2/L	1	8/21/2015 8:23:03 PM	R28401
EPA METHOD 300.0: ANIONS							Analyst: LGT
Fluoride	ND	0.10		mg/L	1	8/19/2015 9:34:49 PM	R28334
Chloride	940	50	*	mg/L	100	8/25/2015 3:02:27 AM	R28432
Nitrogen, Nitrite (As N)	ND	2.0		mg/L	20	8/19/2015 9:47:13 PM	R28334
Bromide	3.4	2.0		mg/L	20	8/19/2015 9:47:13 PM	R28334
Nitrogen, Nitrate (As N)	40	2.0	*	mg/L	20	8/19/2015 9:47:13 PM	R28334
Phosphorus, Orthophosphate (As P)	ND	10		mg/L	20	8/19/2015 9:47:13 PM	R28334
Sulfate	1500	50	*	mg/L	100	8/25/2015 3:02:27 AM	R28432
SM2510B: SPECIFIC CONDUCTANCE							Analyst: MRA
Conductivity	5700	0.010		µmhos/cm	1	8/21/2015 8:23:03 PM	R28401
SM2320B: ALKALINITY							Analyst: MRA
Bicarbonate (As CaCO3)	287.7	20.00		mg/L CaCO3	1	8/21/2015 8:23:03 PM	R28401
Carbonate (As CaCO3)	ND	2.000		mg/L CaCO3	1	8/21/2015 8:23:03 PM	R28401
Total Alkalinity (as CaCO3)	287.7	20.00		mg/L CaCO3	1	8/21/2015 8:23:03 PM	R28401
SM2540C MOD: TOTAL DISSOLVED SOLIDS							Analyst: KS
Total Dissolved Solids	4360	200	*D	mg/L	1	8/20/2015 3:44:00 PM	20886

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order: 1508875

Date Reported: 9/15/2015

CLIENT: Western Refining Southwest, Inc.
Project: RCRA Wells 8-18-15
Lab ID: 1508875-007E

Client Sample ID: MW-64
Collection Date: 8/18/2015 10:00:00 AM
Matrix: Aqueous

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 7470: MERCURY							Analyst: JLF
Mercury	ND	0.00020		mg/L	1	8/26/2015 4:27:10 PM	20989
EPA 6010B: TOTAL RECOVERABLE METALS							Analyst: MED
Arsenic	ND	0.020		mg/L	1	8/25/2015 1:31:58 PM	20922
Barium	0.077	0.020		mg/L	1	8/25/2015 1:31:58 PM	20922
Cadmium	ND	0.0020		mg/L	1	8/25/2015 1:31:58 PM	20922
Chromium	ND	0.0060		mg/L	1	8/25/2015 1:31:58 PM	20922
Lead	ND	0.0050		mg/L	1	8/25/2015 1:31:58 PM	20922
Selenium	ND	0.050		mg/L	1	8/25/2015 1:31:58 PM	20922
Silver	ND	0.0050		mg/L	1	8/25/2015 1:31:58 PM	20922

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order: 1508875

Date Reported: 9/15/2015

CLIENT: Western Refining Southwest, Inc.
Project: RCRA Wells 8-18-15
Lab ID: 1508875-007F

Client Sample ID: MW-64
Collection Date: 8/18/2015 10:00:00 AM
Matrix: Aqueous

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 7470: MERCURY							Analyst: JLF
Mercury	ND	0.00020		mg/L	1	8/27/2015 4:29:30 PM	21012
EPA METHOD 6010B: DISSOLVED METALS							Analyst: MED
Arsenic	ND	0.020		mg/L	1	8/24/2015 1:56:34 PM	B28416
Barium	ND	0.020		mg/L	1	8/24/2015 1:56:34 PM	B28416
Cadmium	ND	0.0020		mg/L	1	8/24/2015 1:56:34 PM	B28416
Calcium	530	10		mg/L	10	8/24/2015 4:29:39 PM	B28416
Chromium	ND	0.0060		mg/L	1	8/24/2015 1:56:34 PM	B28416
Copper	ND	0.0060		mg/L	1	8/24/2015 1:56:34 PM	B28416
Iron	ND	0.020		mg/L	1	8/24/2015 1:56:34 PM	B28416
Lead	ND	0.0050		mg/L	1	8/24/2015 1:56:34 PM	B28416
Magnesium	72	1.0		mg/L	1	8/25/2015 12:25:24 PM	A28442
Manganese	ND	0.0020		mg/L	1	8/24/2015 1:56:34 PM	B28416
Potassium	5.1	1.0		mg/L	1	8/24/2015 1:56:34 PM	B28416
Selenium	ND	0.050		mg/L	1	8/24/2015 1:56:34 PM	B28416
Silver	ND	0.0050		mg/L	1	8/24/2015 1:56:34 PM	B28416
Sodium	850	10		mg/L	10	8/24/2015 3:15:35 PM	B28416
Uranium	ND	0.10		mg/L	1	8/24/2015 1:56:34 PM	B28416
Zinc	ND	0.020		mg/L	1	8/24/2015 1:56:34 PM	B28416

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Analytical Report

Lab Order: 1508875

Date Reported: 9/15/2015

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Southwest, Inc.
Project: RCRA Wells 8-18-15
Lab ID: 1508875-008A

Client Sample ID: MW-64D
Collection Date: 8/18/2015 10:00:00 AM
Matrix: Aqueous

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES				Analyst: DJF			
Benzene	ND	2.0	D	µg/L	2	8/20/2015 6:05:30 PM	R28360
Toluene	ND	2.0	D	µg/L	2	8/20/2015 6:05:30 PM	R28360
Ethylbenzene	ND	2.0	D	µg/L	2	8/20/2015 6:05:30 PM	R28360
Methyl tert-butyl ether (MTBE)	ND	2.0	D	µg/L	2	8/20/2015 6:05:30 PM	R28360
1,2,4-Trimethylbenzene	ND	2.0	D	µg/L	2	8/20/2015 6:05:30 PM	R28360
1,3,5-Trimethylbenzene	ND	2.0	D	µg/L	2	8/20/2015 6:05:30 PM	R28360
1,2-Dichloroethane (EDC)	ND	2.0	D	µg/L	2	8/20/2015 6:05:30 PM	R28360
1,2-Dibromoethane (EDB)	ND	2.0	D	µg/L	2	8/20/2015 6:05:30 PM	R28360
Naphthalene	ND	4.0	D	µg/L	2	8/20/2015 6:05:30 PM	R28360
1-Methylnaphthalene	ND	8.0	D	µg/L	2	8/20/2015 6:05:30 PM	R28360
2-Methylnaphthalene	ND	8.0	D	µg/L	2	8/20/2015 6:05:30 PM	R28360
Acetone	ND	20	D	µg/L	2	8/20/2015 6:05:30 PM	R28360
Bromobenzene	ND	2.0	D	µg/L	2	8/20/2015 6:05:30 PM	R28360
Bromodichloromethane	ND	2.0	D	µg/L	2	8/20/2015 6:05:30 PM	R28360
Bromoform	ND	2.0	D	µg/L	2	8/20/2015 6:05:30 PM	R28360
Bromomethane	ND	6.0	D	µg/L	2	8/20/2015 6:05:30 PM	R28360
2-Butanone	ND	20	D	µg/L	2	8/20/2015 6:05:30 PM	R28360
Carbon disulfide	ND	20	D	µg/L	2	8/20/2015 6:05:30 PM	R28360
Carbon Tetrachloride	ND	2.0	D	µg/L	2	8/20/2015 6:05:30 PM	R28360
Chlorobenzene	ND	2.0	D	µg/L	2	8/20/2015 6:05:30 PM	R28360
Chloroethane	ND	4.0	D	µg/L	2	8/20/2015 6:05:30 PM	R28360
Chloroform	ND	2.0	D	µg/L	2	8/20/2015 6:05:30 PM	R28360
Chloromethane	ND	6.0	D	µg/L	2	8/20/2015 6:05:30 PM	R28360
2-Chlorotoluene	ND	2.0	D	µg/L	2	8/20/2015 6:05:30 PM	R28360
4-Chlorotoluene	ND	2.0	D	µg/L	2	8/20/2015 6:05:30 PM	R28360
cis-1,2-DCE	ND	2.0	D	µg/L	2	8/20/2015 6:05:30 PM	R28360
cis-1,3-Dichloropropene	ND	2.0	D	µg/L	2	8/20/2015 6:05:30 PM	R28360
1,2-Dibromo-3-chloropropane	ND	4.0	D	µg/L	2	8/20/2015 6:05:30 PM	R28360
Dibromochloromethane	ND	2.0	D	µg/L	2	8/20/2015 6:05:30 PM	R28360
Dibromomethane	ND	2.0	D	µg/L	2	8/20/2015 6:05:30 PM	R28360
1,2-Dichlorobenzene	ND	2.0	D	µg/L	2	8/20/2015 6:05:30 PM	R28360
1,3-Dichlorobenzene	ND	2.0	D	µg/L	2	8/20/2015 6:05:30 PM	R28360
1,4-Dichlorobenzene	ND	2.0	D	µg/L	2	8/20/2015 6:05:30 PM	R28360
Dichlorodifluoromethane	ND	2.0	D	µg/L	2	8/20/2015 6:05:30 PM	R28360
1,1-Dichloroethane	ND	2.0	D	µg/L	2	8/20/2015 6:05:30 PM	R28360
1,1-Dichloroethene	ND	2.0	D	µg/L	2	8/20/2015 6:05:30 PM	R28360
1,2-Dichloropropane	ND	2.0	D	µg/L	2	8/20/2015 6:05:30 PM	R28360
1,3-Dichloropropane	ND	2.0	D	µg/L	2	8/20/2015 6:05:30 PM	R28360
2,2-Dichloropropane	ND	4.0	D	µg/L	2	8/20/2015 6:05:30 PM	R28360
1,1-Dichloropropene	ND	2.0	D	µg/L	2	8/20/2015 6:05:30 PM	R28360
Hexachlorobutadiene	ND	2.0	D	µg/L	2	8/20/2015 6:05:30 PM	R28360

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order: 1508875

Date Reported: 9/15/2015

CLIENT: Western Refining Southwest, Inc.
Project: RCRA Wells 8-18-15
Lab ID: 1508875-008A

Client Sample ID: MW-64D
Collection Date: 8/18/2015 10:00:00 AM
Matrix: Aqueous

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: DJF
2-Hexanone	ND	20	D	µg/L	2	8/20/2015 6:05:30 PM	R28360
Isopropylbenzene	ND	2.0	D	µg/L	2	8/20/2015 6:05:30 PM	R28360
4-Isopropyltoluene	ND	2.0	D	µg/L	2	8/20/2015 6:05:30 PM	R28360
4-Methyl-2-pentanone	ND	20	D	µg/L	2	8/20/2015 6:05:30 PM	R28360
Methylene Chloride	ND	6.0	D	µg/L	2	8/20/2015 6:05:30 PM	R28360
n-Butylbenzene	ND	6.0	D	µg/L	2	8/20/2015 6:05:30 PM	R28360
n-Propylbenzene	ND	2.0	D	µg/L	2	8/20/2015 6:05:30 PM	R28360
sec-Butylbenzene	ND	2.0	D	µg/L	2	8/20/2015 6:05:30 PM	R28360
Styrene	ND	2.0	D	µg/L	2	8/20/2015 6:05:30 PM	R28360
tert-Butylbenzene	ND	2.0	D	µg/L	2	8/20/2015 6:05:30 PM	R28360
1,1,1,2-Tetrachloroethane	ND	2.0	D	µg/L	2	8/20/2015 6:05:30 PM	R28360
1,1,2,2-Tetrachloroethane	ND	4.0	D	µg/L	2	8/20/2015 6:05:30 PM	R28360
Tetrachloroethene (PCE)	ND	2.0	D	µg/L	2	8/20/2015 6:05:30 PM	R28360
trans-1,2-DCE	ND	2.0	D	µg/L	2	8/20/2015 6:05:30 PM	R28360
trans-1,3-Dichloropropene	ND	2.0	D	µg/L	2	8/20/2015 6:05:30 PM	R28360
1,2,3-Trichlorobenzene	ND	2.0	D	µg/L	2	8/20/2015 6:05:30 PM	R28360
1,2,4-Trichlorobenzene	ND	2.0	D	µg/L	2	8/20/2015 6:05:30 PM	R28360
1,1,1-Trichloroethane	ND	2.0	D	µg/L	2	8/20/2015 6:05:30 PM	R28360
1,1,2-Trichloroethane	ND	2.0	D	µg/L	2	8/20/2015 6:05:30 PM	R28360
Trichloroethene (TCE)	ND	2.0	D	µg/L	2	8/20/2015 6:05:30 PM	R28360
Trichlorofluoromethane	ND	2.0	D	µg/L	2	8/20/2015 6:05:30 PM	R28360
1,2,3-Trichloropropane	ND	4.0	D	µg/L	2	8/20/2015 6:05:30 PM	R28360
Vinyl chloride	ND	2.0	D	µg/L	2	8/20/2015 6:05:30 PM	R28360
Xylenes, Total	ND	3.0	D	µg/L	2	8/20/2015 6:05:30 PM	R28360
Surr: 1,2-Dichloroethane-d4	97.5	70-130	D	%REC	2	8/20/2015 6:05:30 PM	R28360
Surr: 4-Bromofluorobenzene	111	70-130	D	%REC	2	8/20/2015 6:05:30 PM	R28360
Surr: Dibromofluoromethane	119	70-130	D	%REC	2	8/20/2015 6:05:30 PM	R28360
Surr: Toluene-d8	96.5	70-130	D	%REC	2	8/20/2015 6:05:30 PM	R28360

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
				Page 51 of 105

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order: 1508875

Date Reported: 9/15/2015

CLIENT: Western Refining Southwest, Inc.
Project: RCRA Wells 8-18-15
Lab ID: 1508875-008B

Client Sample ID: MW-64D
Collection Date: 8/18/2015 10:00:00 AM
Matrix: Aqueous

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D: GASOLINE RANGE							Analyst: DJF
Gasoline Range Organics (GRO)	ND	0.10		mg/L	2	8/20/2015 6:05:30 PM	C28360
Surr: BFB	102	70-130		%REC	2	8/20/2015 6:05:30 PM	C28360

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order: 1508875

Date Reported: 9/15/2015

CLIENT: Western Refining Southwest, Inc.
Project: RCRA Wells 8-18-15
Lab ID: 1508875-008C

Client Sample ID: MW-64D
Collection Date: 8/18/2015 10:00:00 AM
Matrix: Aqueous

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D: DIESEL RANGE							Analyst: TOM
Diesel Range Organics (DRO)	ND	0.20		mg/L	1	8/19/2015 8:27:52 PM	20869
Motor Oil Range Organics (MRO)	ND	2.5		mg/L	1	8/19/2015 8:27:52 PM	20869
Surr: DNOP	114	84.6-165		%REC	1	8/19/2015 8:27:52 PM	20869

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order: 1508875

Date Reported: 9/15/2015

CLIENT: Western Refining Southwest, Inc.
Project: RCRA Wells 8-18-15
Lab ID: 1508875-008D

Client Sample ID: MW-64D
Collection Date: 8/18/2015 10:00:00 AM
Matrix: Aqueous

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
CARBON DIOXIDE							Analyst: MRA
Total Carbon Dioxide	260	1.0	H	mg CO2/L	1	8/21/2015 8:36:21 PM	R28401
EPA METHOD 300.0: ANIONS							Analyst: LGT
Fluoride	ND	0.10		mg/L	1	8/19/2015 9:59:38 PM	R28334
Chloride	1000	50	*	mg/L	100	8/25/2015 3:14:51 AM	R28432
Nitrogen, Nitrite (As N)	ND	2.0		mg/L	20	8/19/2015 10:12:03 PM	R28334
Bromide	3.4	2.0		mg/L	20	8/19/2015 10:12:03 PM	R28334
Nitrogen, Nitrate (As N)	42	2.0	*	mg/L	20	8/19/2015 10:12:03 PM	R28334
Phosphorus, Orthophosphate (As P)	ND	10		mg/L	20	8/19/2015 10:12:03 PM	R28334
Sulfate	1600	50	*	mg/L	100	8/25/2015 3:14:51 AM	R28432
SM2510B: SPECIFIC CONDUCTANCE							Analyst: MRA
Conductivity	5600	0.010		µmhos/cm	1	8/21/2015 8:36:21 PM	R28401
SM2320B: ALKALINITY							Analyst: MRA
Bicarbonate (As CaCO3)	288.0	20.00		mg/L CaCO3	1	8/21/2015 8:36:21 PM	R28401
Carbonate (As CaCO3)	ND	2.000		mg/L CaCO3	1	8/21/2015 8:36:21 PM	R28401
Total Alkalinity (as CaCO3)	288.0	20.00		mg/L CaCO3	1	8/21/2015 8:36:21 PM	R28401
SM2540C MOD: TOTAL DISSOLVED SOLIDS							Analyst: KS
Total Dissolved Solids	4310	200	*D	mg/L	1	8/20/2015 3:44:00 PM	20886

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order: 1508875

Date Reported: 9/15/2015

CLIENT: Western Refining Southwest, Inc.
Project: RCRA Wells 8-18-15
Lab ID: 1508875-008E

Client Sample ID: MW-64D
Collection Date: 8/18/2015 10:00:00 AM
Matrix: Aqueous

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 7470: MERCURY							Analyst: JLF
Mercury	ND	0.00020		mg/L	1	8/26/2015 4:29:11 PM	20989
EPA 6010B: TOTAL RECOVERABLE METALS							Analyst: MED
Arsenic	ND	0.020		mg/L	1	8/25/2015 1:33:44 PM	20922
Barium	0.54	0.020		mg/L	1	8/25/2015 1:33:44 PM	20922
Cadmium	ND	0.0020		mg/L	1	8/25/2015 1:33:44 PM	20922
Chromium	0.017	0.0060		mg/L	1	8/25/2015 1:33:44 PM	20922
Lead	0.0055	0.0050		mg/L	1	8/25/2015 1:33:44 PM	20922
Selenium	ND	0.050		mg/L	1	8/25/2015 1:33:44 PM	20922
Silver	ND	0.0050		mg/L	1	8/25/2015 1:33:44 PM	20922

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order: 1508875

Date Reported: 9/15/2015

CLIENT: Western Refining Southwest, Inc.
Project: RCRA Wells 8-18-15
Lab ID: 1508875-008F

Client Sample ID: MW-64D
Collection Date: 8/18/2015 10:00:00 AM
Matrix: Aqueous

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 7470: MERCURY							Analyst: JLF
Mercury	ND	0.00020		mg/L	1	8/27/2015 4:31:35 PM	21012
EPA METHOD 6010B: DISSOLVED METALS							Analyst: MED
Arsenic	ND	0.020		mg/L	1	8/24/2015 1:58:26 PM	B28416
Barium	ND	0.020		mg/L	1	8/24/2015 1:58:26 PM	B28416
Cadmium	ND	0.0020		mg/L	1	8/24/2015 1:58:26 PM	B28416
Calcium	520	10		mg/L	10	8/24/2015 4:31:33 PM	B28416
Chromium	ND	0.0060		mg/L	1	8/24/2015 1:58:26 PM	B28416
Copper	ND	0.0060		mg/L	1	8/24/2015 1:58:26 PM	B28416
Iron	ND	0.020		mg/L	1	8/24/2015 1:58:26 PM	B28416
Lead	ND	0.0050		mg/L	1	8/24/2015 1:58:26 PM	B28416
Magnesium	70	1.0		mg/L	1	8/25/2015 12:27:24 PM	A28442
Manganese	ND	0.0020		mg/L	1	8/24/2015 1:58:26 PM	B28416
Potassium	4.9	1.0		mg/L	1	8/24/2015 1:58:26 PM	B28416
Selenium	ND	0.050		mg/L	1	8/24/2015 1:58:26 PM	B28416
Silver	ND	0.0050		mg/L	1	8/24/2015 1:58:26 PM	B28416
Sodium	860	10		mg/L	10	8/24/2015 3:17:28 PM	B28416
Uranium	ND	0.10		mg/L	1	8/24/2015 1:58:26 PM	B28416
Zinc	0.020	0.020		mg/L	1	8/24/2015 1:58:26 PM	B28416

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Analytical Report

Lab Order: 1508875

Hall Environmental Analysis Laboratory, Inc.

Date Reported: 9/15/2015

CLIENT: Western Refining Southwest, Inc.
Project: RCRA Wells 8-18-15
Lab ID: 1508875-009A

Client Sample ID: MW-65
Collection Date: 8/18/2015 9:20:00 AM
Matrix: Aqueous

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: DJF
Benzene	7800	200		µg/L	200	8/20/2015 6:33:13 PM	R28360
Toluene	ND	20		µg/L	20	8/20/2015 7:00:54 PM	R28360
Ethylbenzene	1900	20		µg/L	20	8/20/2015 7:00:54 PM	R28360
Methyl tert-butyl ether (MTBE)	1400	20		µg/L	20	8/20/2015 7:00:54 PM	R28360
1,2,4-Trimethylbenzene	860	20		µg/L	20	8/20/2015 7:00:54 PM	R28360
1,3,5-Trimethylbenzene	ND	20		µg/L	20	8/20/2015 7:00:54 PM	R28360
1,2-Dichloroethane (EDC)	200	20		µg/L	20	8/20/2015 7:00:54 PM	R28360
1,2-Dibromoethane (EDB)	ND	20		µg/L	20	8/20/2015 7:00:54 PM	R28360
Naphthalene	210	40		µg/L	20	8/20/2015 7:00:54 PM	R28360
1-Methylnaphthalene	120	80		µg/L	20	8/20/2015 7:00:54 PM	R28360
2-Methylnaphthalene	ND	80		µg/L	20	8/20/2015 7:00:54 PM	R28360
Acetone	ND	200		µg/L	20	8/20/2015 7:00:54 PM	R28360
Bromobenzene	ND	20		µg/L	20	8/20/2015 7:00:54 PM	R28360
Bromodichloromethane	ND	20		µg/L	20	8/20/2015 7:00:54 PM	R28360
Bromoform	ND	20		µg/L	20	8/20/2015 7:00:54 PM	R28360
Bromomethane	ND	60		µg/L	20	8/20/2015 7:00:54 PM	R28360
2-Butanone	ND	200		µg/L	20	8/20/2015 7:00:54 PM	R28360
Carbon disulfide	ND	200		µg/L	20	8/20/2015 7:00:54 PM	R28360
Carbon Tetrachloride	ND	20		µg/L	20	8/20/2015 7:00:54 PM	R28360
Chlorobenzene	ND	20		µg/L	20	8/20/2015 7:00:54 PM	R28360
Chloroethane	ND	40		µg/L	20	8/20/2015 7:00:54 PM	R28360
Chloroform	ND	20		µg/L	20	8/20/2015 7:00:54 PM	R28360
Chloromethane	ND	60		µg/L	20	8/20/2015 7:00:54 PM	R28360
2-Chlorotoluene	ND	20		µg/L	20	8/20/2015 7:00:54 PM	R28360
4-Chlorotoluene	ND	20		µg/L	20	8/20/2015 7:00:54 PM	R28360
cis-1,2-DCE	ND	20		µg/L	20	8/20/2015 7:00:54 PM	R28360
cis-1,3-Dichloropropene	ND	20		µg/L	20	8/20/2015 7:00:54 PM	R28360
1,2-Dibromo-3-chloropropane	ND	40		µg/L	20	8/20/2015 7:00:54 PM	R28360
Dibromochloromethane	ND	20		µg/L	20	8/20/2015 7:00:54 PM	R28360
Dibromomethane	ND	20		µg/L	20	8/20/2015 7:00:54 PM	R28360
1,2-Dichlorobenzene	ND	20		µg/L	20	8/20/2015 7:00:54 PM	R28360
1,3-Dichlorobenzene	ND	20		µg/L	20	8/20/2015 7:00:54 PM	R28360
1,4-Dichlorobenzene	ND	20		µg/L	20	8/20/2015 7:00:54 PM	R28360
Dichlorodifluoromethane	ND	20		µg/L	20	8/20/2015 7:00:54 PM	R28360
1,1-Dichloroethane	ND	20		µg/L	20	8/20/2015 7:00:54 PM	R28360
1,1-Dichloroethene	ND	20		µg/L	20	8/20/2015 7:00:54 PM	R28360
1,2-Dichloropropane	ND	20		µg/L	20	8/20/2015 7:00:54 PM	R28360
1,3-Dichloropropane	ND	20		µg/L	20	8/20/2015 7:00:54 PM	R28360
2,2-Dichloropropane	ND	40		µg/L	20	8/20/2015 7:00:54 PM	R28360
1,1-Dichloropropene	ND	20		µg/L	20	8/20/2015 7:00:54 PM	R28360
Hexachlorobutadiene	ND	20		µg/L	20	8/20/2015 7:00:54 PM	R28360

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Analytical Report

Lab Order: 1508875

Date Reported: 9/15/2015

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Southwest, Inc.
Project: RCRA Wells 8-18-15
Lab ID: 1508875-009A

Client Sample ID: MW-65
Collection Date: 8/18/2015 9:20:00 AM
Matrix: Aqueous

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES				Analyst: DJF			
2-Hexanone	ND	200		µg/L	20	8/20/2015 7:00:54 PM	R28360
Isopropylbenzene	88	20		µg/L	20	8/20/2015 7:00:54 PM	R28360
4-Isopropyltoluene	ND	20		µg/L	20	8/20/2015 7:00:54 PM	R28360
4-Methyl-2-pentanone	ND	200		µg/L	20	8/20/2015 7:00:54 PM	R28360
Methylene Chloride	ND	60		µg/L	20	8/20/2015 7:00:54 PM	R28360
n-Butylbenzene	ND	60		µg/L	20	8/20/2015 7:00:54 PM	R28360
n-Propylbenzene	250	20		µg/L	20	8/20/2015 7:00:54 PM	R28360
sec-Butylbenzene	ND	20		µg/L	20	8/20/2015 7:00:54 PM	R28360
Styrene	ND	20		µg/L	20	8/20/2015 7:00:54 PM	R28360
tert-Butylbenzene	ND	20		µg/L	20	8/20/2015 7:00:54 PM	R28360
1,1,1,2-Tetrachloroethane	ND	20		µg/L	20	8/20/2015 7:00:54 PM	R28360
1,1,2,2-Tetrachloroethane	ND	40		µg/L	20	8/20/2015 7:00:54 PM	R28360
Tetrachloroethene (PCE)	ND	20		µg/L	20	8/20/2015 7:00:54 PM	R28360
trans-1,2-DCE	ND	20		µg/L	20	8/20/2015 7:00:54 PM	R28360
trans-1,3-Dichloropropene	ND	20		µg/L	20	8/20/2015 7:00:54 PM	R28360
1,2,3-Trichlorobenzene	ND	20		µg/L	20	8/20/2015 7:00:54 PM	R28360
1,2,4-Trichlorobenzene	ND	20		µg/L	20	8/20/2015 7:00:54 PM	R28360
1,1,1-Trichloroethane	ND	20		µg/L	20	8/20/2015 7:00:54 PM	R28360
1,1,2-Trichloroethane	ND	20		µg/L	20	8/20/2015 7:00:54 PM	R28360
Trichloroethene (TCE)	ND	20		µg/L	20	8/20/2015 7:00:54 PM	R28360
Trichlorofluoromethane	ND	20		µg/L	20	8/20/2015 7:00:54 PM	R28360
1,2,3-Trichloropropane	ND	40		µg/L	20	8/20/2015 7:00:54 PM	R28360
Vinyl chloride	ND	20		µg/L	20	8/20/2015 7:00:54 PM	R28360
Xylenes, Total	150	30		µg/L	20	8/20/2015 7:00:54 PM	R28360
Surr: 1,2-Dichloroethane-d4	107	70-130		%REC	20	8/20/2015 7:00:54 PM	R28360
Surr: 4-Bromofluorobenzene	111	70-130		%REC	20	8/20/2015 7:00:54 PM	R28360
Surr: Dibromofluoromethane	111	70-130		%REC	20	8/20/2015 7:00:54 PM	R28360
Surr: Toluene-d8	97.7	70-130		%REC	20	8/20/2015 7:00:54 PM	R28360

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Analytical ReportLab Order: **1508875**Date Reported: **9/15/2015****Hall Environmental Analysis Laboratory, Inc.****CLIENT:** Western Refining Southwest, Inc.**Client Sample ID:** MW-65**Project:** RCRA Wells 8-18-15**Collection Date:** 8/18/2015 9:20:00 AM**Lab ID:** 1508875-009B**Matrix:** Aqueous

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D: GASOLINE RANGE							Analyst: DJF
Gasoline Range Organics (GRO)	19	1.0		mg/L	20	8/20/2015 7:00:54 PM	C28360
Surr: BFB	108	70-130		%REC	20	8/20/2015 7:00:54 PM	C28360

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Analytical ReportLab Order: **1508875**Date Reported: **9/15/2015****Hall Environmental Analysis Laboratory, Inc.****CLIENT:** Western Refining Southwest, Inc.**Client Sample ID:** MW-65**Project:** RCRA Wells 8-18-15**Collection Date:** 8/18/2015 9:20:00 AM**Lab ID:** 1508875-009C**Matrix:** Aqueous

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D: DIESEL RANGE							Analyst: TOM
Diesel Range Organics (DRO)	7.7	0.20		mg/L	1	8/19/2015 8:49:28 PM	20869
Motor Oil Range Organics (MRO)	ND	2.5		mg/L	1	8/19/2015 8:49:28 PM	20869
Surr: DNOP	111	84.6-165		%REC	1	8/19/2015 8:49:28 PM	20869

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order: 1508875

Date Reported: 9/15/2015

CLIENT: Western Refining Southwest, Inc.
Project: RCRA Wells 8-18-15
Lab ID: 1508875-009D

Client Sample ID: MW-65
Collection Date: 8/18/2015 9:20:00 AM
Matrix: Aqueous

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
CARBON DIOXIDE							Analyst: JRR
Total Carbon Dioxide	1300	2.5	H	mg CO2/L	2.5	8/25/2015 12:36:40 PM	R28459
EPA METHOD 300.0: ANIONS							Analyst: LGT
Fluoride	ND	0.50		mg/L	5	8/19/2015 10:49:16 PM	R28334
Chloride	210	10		mg/L	20	8/19/2015 11:01:40 PM	R28334
Nitrogen, Nitrite (As N)	ND	0.50		mg/L	5	8/19/2015 10:49:16 PM	R28334
Bromide	4.5	0.50		mg/L	5	8/19/2015 10:49:16 PM	R28334
Nitrogen, Nitrate (As N)	ND	0.50		mg/L	5	8/19/2015 10:49:16 PM	R28334
Phosphorus, Orthophosphate (As P)	ND	2.5		mg/L	5	8/19/2015 10:49:16 PM	R28334
Sulfate	970	10	*	mg/L	20	8/19/2015 11:01:40 PM	R28334
SM2510B: SPECIFIC CONDUCTANCE							Analyst: MRA
Conductivity	3900	0.010		µmhos/cm	1	8/21/2015 8:50:09 PM	R28401
SM2320B: ALKALINITY							Analyst: JRR
Bicarbonate (As CaCO3)	1335	50.00		mg/L CaCO3	2.5	8/25/2015 12:36:40 PM	R28459
Carbonate (As CaCO3)	ND	5.000		mg/L CaCO3	2.5	8/25/2015 12:36:40 PM	R28459
Total Alkalinity (as CaCO3)	1335	50.00		mg/L CaCO3	2.5	8/25/2015 12:36:40 PM	R28459
SM2540C MOD: TOTAL DISSOLVED SOLIDS							Analyst: KS
Total Dissolved Solids	3100	100	*D	mg/L	1	8/20/2015 3:44:00 PM	20886

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Analytical ReportLab Order: **1508875**Date Reported: **9/15/2015****Hall Environmental Analysis Laboratory, Inc.**

CLIENT: Western Refining Southwest, Inc.
Project: RCRA Wells 8-18-15
Lab ID: 1508875-009E

Client Sample ID: MW-65
Collection Date: 8/18/2015 9:20:00 AM
Matrix: Aqueous

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 7470: MERCURY							Analyst: JLF
Mercury	ND	0.00020		mg/L	1	8/26/2015 4:31:13 PM	20989
EPA 6010B: TOTAL RECOVERABLE METALS							Analyst: MED
Arsenic	ND	0.020		mg/L	1	8/25/2015 1:35:33 PM	20922
Barium	0.21	0.020		mg/L	1	8/25/2015 1:35:33 PM	20922
Cadmium	ND	0.0020		mg/L	1	8/25/2015 1:35:33 PM	20922
Chromium	ND	0.0060		mg/L	1	8/25/2015 1:35:33 PM	20922
Lead	ND	0.0050		mg/L	1	8/25/2015 1:35:33 PM	20922
Selenium	ND	0.050		mg/L	1	8/25/2015 1:35:33 PM	20922
Silver	ND	0.0050		mg/L	1	8/25/2015 1:35:33 PM	20922

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order: 1508875

Date Reported: 9/15/2015

CLIENT: Western Refining Southwest, Inc.
Project: RCRA Wells 8-18-15
Lab ID: 1508875-009F

Client Sample ID: MW-65
Collection Date: 8/18/2015 9:20:00 AM
Matrix: Aqueous

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 7470: MERCURY				Analyst: JLF			
Mercury	ND	0.00020		mg/L	1	8/27/2015 4:33:41 PM	21012
EPA METHOD 6010B: DISSOLVED METALS				Analyst: MED			
Arsenic	ND	0.020		mg/L	1	8/24/2015 2:00:19 PM	B28416
Barium	0.20	0.020		mg/L	1	8/24/2015 2:00:19 PM	B28416
Cadmium	ND	0.0020		mg/L	1	8/24/2015 2:00:19 PM	B28416
Calcium	270	10		mg/L	10	8/24/2015 4:40:19 PM	B28416
Chromium	ND	0.0060		mg/L	1	8/24/2015 2:00:19 PM	B28416
Copper	ND	0.0060		mg/L	1	8/24/2015 2:00:19 PM	B28416
Iron	7.0	0.20		mg/L	10	8/25/2015 12:30:57 PM	A28442
Lead	0.0055	0.0050		mg/L	1	8/24/2015 2:00:19 PM	B28416
Magnesium	97	2.0		mg/L	2	8/25/2015 12:29:19 PM	A28442
Manganese	1.8	0.0040		mg/L	2	8/24/2015 3:19:18 PM	B28416
Potassium	3.6	1.0		mg/L	1	8/24/2015 2:00:19 PM	B28416
Selenium	ND	0.050		mg/L	1	8/24/2015 2:00:19 PM	B28416
Silver	ND	0.0050		mg/L	1	8/24/2015 2:00:19 PM	B28416
Sodium	680	10		mg/L	10	8/24/2015 3:20:58 PM	B28416
Uranium	ND	0.10		mg/L	1	8/24/2015 2:00:19 PM	B28416
Zinc	0.022	0.020		mg/L	1	8/24/2015 2:00:19 PM	B28416

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Analytical Report

Lab Order: 1508875

Hall Environmental Analysis Laboratory, Inc.

Date Reported: 9/15/2015

CLIENT: Western Refining Southwest, Inc.
Project: RCRA Wells 8-18-15
Lab ID: 1508875-010A

Client Sample ID: MW-59
Collection Date: 8/18/2015 9:50:00 AM
Matrix: Aqueous

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES				Analyst: DJF			
Benzene	7.3	1.0		µg/L	1	8/20/2015 7:55:46 PM	R28360
Toluene	ND	1.0		µg/L	1	8/20/2015 7:55:46 PM	R28360
Ethylbenzene	29	1.0		µg/L	1	8/20/2015 7:55:46 PM	R28360
Methyl tert-butyl ether (MTBE)	1400	10		µg/L	10	8/20/2015 7:28:20 PM	R28360
1,2,4-Trimethylbenzene	ND	1.0		µg/L	1	8/20/2015 7:55:46 PM	R28360
1,3,5-Trimethylbenzene	ND	1.0		µg/L	1	8/20/2015 7:55:46 PM	R28360
1,2-Dichloroethane (EDC)	18	1.0		µg/L	1	8/20/2015 7:55:46 PM	R28360
1,2-Dibromoethane (EDB)	ND	1.0		µg/L	1	8/20/2015 7:55:46 PM	R28360
Naphthalene	ND	2.0		µg/L	1	8/20/2015 7:55:46 PM	R28360
1-Methylnaphthalene	ND	4.0		µg/L	1	8/20/2015 7:55:46 PM	R28360
2-Methylnaphthalene	ND	4.0		µg/L	1	8/20/2015 7:55:46 PM	R28360
Acetone	ND	10		µg/L	1	8/20/2015 7:55:46 PM	R28360
Bromobenzene	ND	1.0		µg/L	1	8/20/2015 7:55:46 PM	R28360
Bromodichloromethane	ND	1.0		µg/L	1	8/20/2015 7:55:46 PM	R28360
Bromoform	ND	1.0		µg/L	1	8/20/2015 7:55:46 PM	R28360
Bromomethane	ND	3.0		µg/L	1	8/20/2015 7:55:46 PM	R28360
2-Butanone	ND	10		µg/L	1	8/20/2015 7:55:46 PM	R28360
Carbon disulfide	ND	10		µg/L	1	8/20/2015 7:55:46 PM	R28360
Carbon Tetrachloride	ND	1.0		µg/L	1	8/20/2015 7:55:46 PM	R28360
Chlorobenzene	ND	1.0		µg/L	1	8/20/2015 7:55:46 PM	R28360
Chloroethane	ND	2.0		µg/L	1	8/20/2015 7:55:46 PM	R28360
Chloroform	ND	1.0		µg/L	1	8/20/2015 7:55:46 PM	R28360
Chloromethane	ND	3.0		µg/L	1	8/20/2015 7:55:46 PM	R28360
2-Chlorotoluene	ND	1.0		µg/L	1	8/20/2015 7:55:46 PM	R28360
4-Chlorotoluene	ND	1.0		µg/L	1	8/20/2015 7:55:46 PM	R28360
cis-1,2-DCE	ND	1.0		µg/L	1	8/20/2015 7:55:46 PM	R28360
cis-1,3-Dichloropropene	ND	1.0		µg/L	1	8/20/2015 7:55:46 PM	R28360
1,2-Dibromo-3-chloropropane	ND	2.0		µg/L	1	8/20/2015 7:55:46 PM	R28360
Dibromochloromethane	ND	1.0		µg/L	1	8/20/2015 7:55:46 PM	R28360
Dibromomethane	ND	1.0		µg/L	1	8/20/2015 7:55:46 PM	R28360
1,2-Dichlorobenzene	ND	1.0		µg/L	1	8/20/2015 7:55:46 PM	R28360
1,3-Dichlorobenzene	ND	1.0		µg/L	1	8/20/2015 7:55:46 PM	R28360
1,4-Dichlorobenzene	ND	1.0		µg/L	1	8/20/2015 7:55:46 PM	R28360
Dichlorodifluoromethane	ND	1.0		µg/L	1	8/20/2015 7:55:46 PM	R28360
1,1-Dichloroethane	ND	1.0		µg/L	1	8/20/2015 7:55:46 PM	R28360
1,1-Dichloroethene	ND	1.0		µg/L	1	8/20/2015 7:55:46 PM	R28360
1,2-Dichloropropane	ND	1.0		µg/L	1	8/20/2015 7:55:46 PM	R28360
1,3-Dichloropropane	ND	1.0		µg/L	1	8/20/2015 7:55:46 PM	R28360
2,2-Dichloropropane	ND	2.0		µg/L	1	8/20/2015 7:55:46 PM	R28360
1,1-Dichloropropene	ND	1.0		µg/L	1	8/20/2015 7:55:46 PM	R28360
Hexachlorobutadiene	ND	1.0		µg/L	1	8/20/2015 7:55:46 PM	R28360

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Analytical Report

Lab Order: 1508875

Hall Environmental Analysis Laboratory, Inc.

Date Reported: 9/15/2015

CLIENT: Western Refining Southwest, Inc.
Project: RCRA Wells 8-18-15
Lab ID: 1508875-010A

Client Sample ID: MW-59
Collection Date: 8/18/2015 9:50:00 AM
Matrix: Aqueous

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES				Analyst: DJF			
2-Hexanone	ND	10		µg/L	1	8/20/2015 7:55:46 PM	R28360
Isopropylbenzene	5.0	1.0		µg/L	1	8/20/2015 7:55:46 PM	R28360
4-Isopropyltoluene	ND	1.0		µg/L	1	8/20/2015 7:55:46 PM	R28360
4-Methyl-2-pentanone	ND	10		µg/L	1	8/20/2015 7:55:46 PM	R28360
Methylene Chloride	ND	3.0		µg/L	1	8/20/2015 7:55:46 PM	R28360
n-Butylbenzene	ND	3.0		µg/L	1	8/20/2015 7:55:46 PM	R28360
n-Propylbenzene	4.4	1.0		µg/L	1	8/20/2015 7:55:46 PM	R28360
sec-Butylbenzene	4.5	1.0		µg/L	1	8/20/2015 7:55:46 PM	R28360
Styrene	ND	1.0		µg/L	1	8/20/2015 7:55:46 PM	R28360
tert-Butylbenzene	ND	1.0		µg/L	1	8/20/2015 7:55:46 PM	R28360
1,1,1,2-Tetrachloroethane	ND	1.0		µg/L	1	8/20/2015 7:55:46 PM	R28360
1,1,2,2-Tetrachloroethane	ND	2.0		µg/L	1	8/20/2015 7:55:46 PM	R28360
Tetrachloroethene (PCE)	ND	1.0		µg/L	1	8/20/2015 7:55:46 PM	R28360
trans-1,2-DCE	ND	1.0		µg/L	1	8/20/2015 7:55:46 PM	R28360
trans-1,3-Dichloropropene	ND	1.0		µg/L	1	8/20/2015 7:55:46 PM	R28360
1,2,3-Trichlorobenzene	ND	1.0		µg/L	1	8/20/2015 7:55:46 PM	R28360
1,2,4-Trichlorobenzene	ND	1.0		µg/L	1	8/20/2015 7:55:46 PM	R28360
1,1,1-Trichloroethane	ND	1.0		µg/L	1	8/20/2015 7:55:46 PM	R28360
1,1,2-Trichloroethane	ND	1.0		µg/L	1	8/20/2015 7:55:46 PM	R28360
Trichloroethene (TCE)	ND	1.0		µg/L	1	8/20/2015 7:55:46 PM	R28360
Trichlorofluoromethane	ND	1.0		µg/L	1	8/20/2015 7:55:46 PM	R28360
1,2,3-Trichloropropane	ND	2.0		µg/L	1	8/20/2015 7:55:46 PM	R28360
Vinyl chloride	ND	1.0		µg/L	1	8/20/2015 7:55:46 PM	R28360
Xylenes, Total	ND	1.5		µg/L	1	8/20/2015 7:55:46 PM	R28360
Surr: 1,2-Dichloroethane-d4	107	70-130		%REC	1	8/20/2015 7:55:46 PM	R28360
Surr: 4-Bromofluorobenzene	100	70-130		%REC	1	8/20/2015 7:55:46 PM	R28360
Surr: Dibromofluoromethane	110	70-130		%REC	1	8/20/2015 7:55:46 PM	R28360
Surr: Toluene-d8	98.9	70-130		%REC	1	8/20/2015 7:55:46 PM	R28360

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order: 1508875

Date Reported: 9/15/2015

CLIENT: Western Refining Southwest, Inc.
Project: RCRA Wells 8-18-15
Lab ID: 1508875-010B

Client Sample ID: MW-59
Collection Date: 8/18/2015 9:50:00 AM
Matrix: Aqueous

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D: GASOLINE RANGE							Analyst: DJF
Gasoline Range Organics (GRO)	1.1	0.050		mg/L	1	8/20/2015 7:55:46 PM	C28360
Surr: BFB	101	70-130		%REC	1	8/20/2015 7:55:46 PM	C28360

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Analytical ReportLab Order: **1508875**Date Reported: **9/15/2015****Hall Environmental Analysis Laboratory, Inc.****CLIENT:** Western Refining Southwest, Inc.**Client Sample ID:** MW-59**Project:** RCRA Wells 8-18-15**Collection Date:** 8/18/2015 9:50:00 AM**Lab ID:** 1508875-010C**Matrix:** Aqueous

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D: DIESEL RANGE							Analyst: TOM
Diesel Range Organics (DRO)	0.32	0.20		mg/L	1	8/19/2015 9:10:58 PM	20869
Motor Oil Range Organics (MRO)	ND	2.5		mg/L	1	8/19/2015 9:10:58 PM	20869
Surr: DNOP	105	84.6-165		%REC	1	8/19/2015 9:10:58 PM	20869

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order: 1508875

Date Reported: 9/15/2015

CLIENT: Western Refining Southwest, Inc.
Project: RCRA Wells 8-18-15
Lab ID: 1508875-010D

Client Sample ID: MW-59
Collection Date: 8/18/2015 9:50:00 AM
Matrix: Aqueous

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
CARBON DIOXIDE							Analyst: MRA
Total Carbon Dioxide	940	1.0	H	mg CO2/L	1	8/21/2015 9:22:36 PM	R28401
EPA METHOD 300.0: ANIONS							Analyst: LGT
Fluoride	ND	0.10		mg/L	1	8/19/2015 11:14:05 PM	R28334
Chloride	240	10		mg/L	20	8/19/2015 11:26:29 PM	R28334
Nitrogen, Nitrite (As N)	ND	0.10		mg/L	1	8/19/2015 11:14:05 PM	R28334
Bromide	1.2	0.10		mg/L	1	8/19/2015 11:14:05 PM	R28334
Nitrogen, Nitrate (As N)	0.28	0.10		mg/L	1	8/19/2015 11:14:05 PM	R28334
Phosphorus, Orthophosphate (As P)	ND	0.50		mg/L	1	8/19/2015 11:14:05 PM	R28334
Sulfate	780	10	*	mg/L	20	8/19/2015 11:26:29 PM	R28334
SM2510B: SPECIFIC CONDUCTANCE							Analyst: MRA
Conductivity	3300	0.010		µmhos/cm	1	8/21/2015 9:22:36 PM	R28401
SM2320B: ALKALINITY							Analyst: MRA
Bicarbonate (As CaCO3)	1035	20.00		mg/L CaCO3	1	8/21/2015 9:22:36 PM	R28401
Carbonate (As CaCO3)	ND	2.000		mg/L CaCO3	1	8/21/2015 9:22:36 PM	R28401
Total Alkalinity (as CaCO3)	1035	20.00		mg/L CaCO3	1	8/21/2015 9:22:36 PM	R28401
SM2540C MOD: TOTAL DISSOLVED SOLIDS							Analyst: KS
Total Dissolved Solids	2430	40.0	*D	mg/L	1	8/20/2015 3:44:00 PM	20886

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Analytical ReportLab Order: **1508875**Date Reported: **9/15/2015****Hall Environmental Analysis Laboratory, Inc.**

CLIENT: Western Refining Southwest, Inc.
Project: RCRA Wells 8-18-15
Lab ID: 1508875-010E

Client Sample ID: MW-59
Collection Date: 8/18/2015 9:50:00 AM
Matrix: Aqueous

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 7470: MERCURY							Analyst: JLF
Mercury	ND	0.00020		mg/L	1	8/26/2015 4:33:14 PM	20989
EPA 6010B: TOTAL RECOVERABLE METALS							Analyst: MED
Arsenic	0.022	0.020		mg/L	1	8/25/2015 1:37:30 PM	20922
Barium	0.21	0.020		mg/L	1	8/25/2015 1:37:30 PM	20922
Cadmium	ND	0.0020		mg/L	1	8/25/2015 1:37:30 PM	20922
Chromium	ND	0.0060		mg/L	1	8/25/2015 1:37:30 PM	20922
Lead	ND	0.0050		mg/L	1	8/25/2015 1:37:30 PM	20922
Selenium	ND	0.050		mg/L	1	8/25/2015 1:37:30 PM	20922
Silver	ND	0.0050		mg/L	1	8/25/2015 1:37:30 PM	20922

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order: 1508875

Date Reported: 9/15/2015

CLIENT: Western Refining Southwest, Inc.
Project: RCRA Wells 8-18-15
Lab ID: 1508875-010F

Client Sample ID: MW-59
Collection Date: 8/18/2015 9:50:00 AM
Matrix: Aqueous

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 7470: MERCURY							Analyst: JLF
Mercury	ND	0.00020		mg/L	1	8/27/2015 4:35:47 PM	21012
EPA METHOD 6010B: DISSOLVED METALS							Analyst: MED
Arsenic	ND	0.020		mg/L	1	8/24/2015 2:02:01 PM	B28416
Barium	0.055	0.020		mg/L	1	8/24/2015 2:02:01 PM	B28416
Cadmium	ND	0.0020		mg/L	1	8/24/2015 2:02:01 PM	B28416
Calcium	250	5.0		mg/L	5	8/24/2015 3:28:22 PM	B28416
Chromium	ND	0.0060		mg/L	1	8/24/2015 2:02:01 PM	B28416
Copper	ND	0.0060		mg/L	1	8/24/2015 2:02:01 PM	B28416
Iron	4.3	0.10		mg/L	5	8/24/2015 3:28:22 PM	B28416
Lead	ND	0.0050		mg/L	1	8/24/2015 2:02:01 PM	B28416
Magnesium	69	1.0		mg/L	1	8/25/2015 12:38:16 PM	A28442
Manganese	1.9	0.010		mg/L	5	8/24/2015 3:28:22 PM	B28416
Potassium	3.6	1.0		mg/L	1	8/24/2015 2:02:01 PM	B28416
Selenium	ND	0.050		mg/L	1	8/24/2015 2:02:01 PM	B28416
Silver	ND	0.0050		mg/L	1	8/24/2015 2:02:01 PM	B28416
Sodium	470	5.0		mg/L	5	8/24/2015 3:28:22 PM	B28416
Uranium	ND	0.10		mg/L	1	8/24/2015 2:02:01 PM	B28416
Zinc	0.036	0.020		mg/L	1	8/24/2015 2:02:01 PM	B28416

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Analytical ReportLab Order: **1508875**Date Reported: **9/15/2015****Hall Environmental Analysis Laboratory, Inc.****CLIENT:** Western Refining Southwest, Inc.**Client Sample ID:** Equip. Blank**Project:** RCRA Wells 8-18-15**Collection Date:** 8/18/2015 11:10:00 AM**Lab ID:** 1508875-011A**Matrix:** Aqueous

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260: VOLATILES SHORT LIST							Analyst: DJF
Benzene	ND	1.0		µg/L	1	8/20/2015 8:23:13 PM	D28360
Toluene	ND	1.0		µg/L	1	8/20/2015 8:23:13 PM	D28360
Ethylbenzene	ND	1.0		µg/L	1	8/20/2015 8:23:13 PM	D28360
Xylenes, Total	ND	1.5		µg/L	1	8/20/2015 8:23:13 PM	D28360
Surr: 1,2-Dichloroethane-d4	97.5	70-130		%REC	1	8/20/2015 8:23:13 PM	D28360
Surr: 4-Bromofluorobenzene	105	70-130		%REC	1	8/20/2015 8:23:13 PM	D28360
Surr: Dibromofluoromethane	108	70-130		%REC	1	8/20/2015 8:23:13 PM	D28360
Surr: Toluene-d8	98.4	70-130		%REC	1	8/20/2015 8:23:13 PM	D28360

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
				Page 71 of 105

Analytical Report

Lab Order: 1508875

Hall Environmental Analysis Laboratory, Inc.

Date Reported: 9/15/2015

CLIENT: Western Refining Southwest, Inc.
Project: RCRA Wells 8-18-15
Lab ID: 1508875-012A

Client Sample ID: MW-67
Collection Date: 8/18/2015 8:30:00 AM
Matrix: Aqueous

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES				Analyst: DJF			
Benzene	ND	1.0		µg/L	1	8/20/2015 8:50:38 PM	R28360
Toluene	ND	1.0		µg/L	1	8/20/2015 8:50:38 PM	R28360
Ethylbenzene	ND	1.0		µg/L	1	8/20/2015 8:50:38 PM	R28360
Methyl tert-butyl ether (MTBE)	ND	1.0		µg/L	1	8/20/2015 8:50:38 PM	R28360
1,2,4-Trimethylbenzene	ND	1.0		µg/L	1	8/20/2015 8:50:38 PM	R28360
1,3,5-Trimethylbenzene	ND	1.0		µg/L	1	8/20/2015 8:50:38 PM	R28360
1,2-Dichloroethane (EDC)	ND	1.0		µg/L	1	8/20/2015 8:50:38 PM	R28360
1,2-Dibromoethane (EDB)	ND	1.0		µg/L	1	8/20/2015 8:50:38 PM	R28360
Naphthalene	ND	2.0		µg/L	1	8/20/2015 8:50:38 PM	R28360
1-Methylnaphthalene	ND	4.0		µg/L	1	8/20/2015 8:50:38 PM	R28360
2-Methylnaphthalene	ND	4.0		µg/L	1	8/20/2015 8:50:38 PM	R28360
Acetone	ND	10		µg/L	1	8/20/2015 8:50:38 PM	R28360
Bromobenzene	ND	1.0		µg/L	1	8/20/2015 8:50:38 PM	R28360
Bromodichloromethane	ND	1.0		µg/L	1	8/20/2015 8:50:38 PM	R28360
Bromoform	ND	1.0		µg/L	1	8/20/2015 8:50:38 PM	R28360
Bromomethane	ND	3.0		µg/L	1	8/20/2015 8:50:38 PM	R28360
2-Butanone	ND	10		µg/L	1	8/20/2015 8:50:38 PM	R28360
Carbon disulfide	ND	10		µg/L	1	8/20/2015 8:50:38 PM	R28360
Carbon Tetrachloride	ND	1.0		µg/L	1	8/20/2015 8:50:38 PM	R28360
Chlorobenzene	ND	1.0		µg/L	1	8/20/2015 8:50:38 PM	R28360
Chloroethane	ND	2.0		µg/L	1	8/20/2015 8:50:38 PM	R28360
Chloroform	ND	1.0		µg/L	1	8/20/2015 8:50:38 PM	R28360
Chloromethane	ND	3.0		µg/L	1	8/20/2015 8:50:38 PM	R28360
2-Chlorotoluene	ND	1.0		µg/L	1	8/20/2015 8:50:38 PM	R28360
4-Chlorotoluene	ND	1.0		µg/L	1	8/20/2015 8:50:38 PM	R28360
cis-1,2-DCE	ND	1.0		µg/L	1	8/20/2015 8:50:38 PM	R28360
cis-1,3-Dichloropropene	ND	1.0		µg/L	1	8/20/2015 8:50:38 PM	R28360
1,2-Dibromo-3-chloropropane	ND	2.0		µg/L	1	8/20/2015 8:50:38 PM	R28360
Dibromochloromethane	ND	1.0		µg/L	1	8/20/2015 8:50:38 PM	R28360
Dibromomethane	ND	1.0		µg/L	1	8/20/2015 8:50:38 PM	R28360
1,2-Dichlorobenzene	ND	1.0		µg/L	1	8/20/2015 8:50:38 PM	R28360
1,3-Dichlorobenzene	ND	1.0		µg/L	1	8/20/2015 8:50:38 PM	R28360
1,4-Dichlorobenzene	ND	1.0		µg/L	1	8/20/2015 8:50:38 PM	R28360
Dichlorodifluoromethane	ND	1.0		µg/L	1	8/20/2015 8:50:38 PM	R28360
1,1-Dichloroethane	ND	1.0		µg/L	1	8/20/2015 8:50:38 PM	R28360
1,1-Dichloroethene	ND	1.0		µg/L	1	8/20/2015 8:50:38 PM	R28360
1,2-Dichloropropane	ND	1.0		µg/L	1	8/20/2015 8:50:38 PM	R28360
1,3-Dichloropropane	ND	1.0		µg/L	1	8/20/2015 8:50:38 PM	R28360
2,2-Dichloropropane	ND	2.0		µg/L	1	8/20/2015 8:50:38 PM	R28360
1,1-Dichloropropene	ND	1.0		µg/L	1	8/20/2015 8:50:38 PM	R28360
Hexachlorobutadiene	ND	1.0		µg/L	1	8/20/2015 8:50:38 PM	R28360

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Analytical Report

Lab Order: 1508875

Hall Environmental Analysis Laboratory, Inc.

Date Reported: 9/15/2015

CLIENT: Western Refining Southwest, Inc.
Project: RCRA Wells 8-18-15
Lab ID: 1508875-012A

Client Sample ID: MW-67
Collection Date: 8/18/2015 8:30:00 AM
Matrix: Aqueous

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES				Analyst: DJF			
2-Hexanone	ND	10		µg/L	1	8/20/2015 8:50:38 PM	R28360
Isopropylbenzene	ND	1.0		µg/L	1	8/20/2015 8:50:38 PM	R28360
4-Isopropyltoluene	ND	1.0		µg/L	1	8/20/2015 8:50:38 PM	R28360
4-Methyl-2-pentanone	ND	10		µg/L	1	8/20/2015 8:50:38 PM	R28360
Methylene Chloride	ND	3.0		µg/L	1	8/20/2015 8:50:38 PM	R28360
n-Butylbenzene	ND	3.0		µg/L	1	8/20/2015 8:50:38 PM	R28360
n-Propylbenzene	ND	1.0		µg/L	1	8/20/2015 8:50:38 PM	R28360
sec-Butylbenzene	ND	1.0		µg/L	1	8/20/2015 8:50:38 PM	R28360
Styrene	ND	1.0		µg/L	1	8/20/2015 8:50:38 PM	R28360
tert-Butylbenzene	ND	1.0		µg/L	1	8/20/2015 8:50:38 PM	R28360
1,1,1,2-Tetrachloroethane	ND	1.0		µg/L	1	8/20/2015 8:50:38 PM	R28360
1,1,2,2-Tetrachloroethane	ND	2.0		µg/L	1	8/20/2015 8:50:38 PM	R28360
Tetrachloroethene (PCE)	ND	1.0		µg/L	1	8/20/2015 8:50:38 PM	R28360
trans-1,2-DCE	ND	1.0		µg/L	1	8/20/2015 8:50:38 PM	R28360
trans-1,3-Dichloropropene	ND	1.0		µg/L	1	8/20/2015 8:50:38 PM	R28360
1,2,3-Trichlorobenzene	ND	1.0		µg/L	1	8/20/2015 8:50:38 PM	R28360
1,2,4-Trichlorobenzene	ND	1.0		µg/L	1	8/20/2015 8:50:38 PM	R28360
1,1,1-Trichloroethane	ND	1.0		µg/L	1	8/20/2015 8:50:38 PM	R28360
1,1,2-Trichloroethane	ND	1.0		µg/L	1	8/20/2015 8:50:38 PM	R28360
Trichloroethene (TCE)	ND	1.0		µg/L	1	8/20/2015 8:50:38 PM	R28360
Trichlorofluoromethane	ND	1.0		µg/L	1	8/20/2015 8:50:38 PM	R28360
1,2,3-Trichloropropane	ND	2.0		µg/L	1	8/20/2015 8:50:38 PM	R28360
Vinyl chloride	ND	1.0		µg/L	1	8/20/2015 8:50:38 PM	R28360
Xylenes, Total	ND	1.5		µg/L	1	8/20/2015 8:50:38 PM	R28360
Surr: 1,2-Dichloroethane-d4	96.5	70-130		%REC	1	8/20/2015 8:50:38 PM	R28360
Surr: 4-Bromofluorobenzene	111	70-130		%REC	1	8/20/2015 8:50:38 PM	R28360
Surr: Dibromofluoromethane	111	70-130		%REC	1	8/20/2015 8:50:38 PM	R28360
Surr: Toluene-d8	98.5	70-130		%REC	1	8/20/2015 8:50:38 PM	R28360

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
				Page 73 of 105

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order: 1508875

Date Reported: 9/15/2015

CLIENT: Western Refining Southwest, Inc.
Project: RCRA Wells 8-18-15
Lab ID: 1508875-012B

Client Sample ID: MW-67
Collection Date: 8/18/2015 8:30:00 AM
Matrix: Aqueous

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D: GASOLINE RANGE							Analyst: DJF
Gasoline Range Organics (GRO)	ND	0.050		mg/L	1	8/20/2015 8:50:38 PM	C28360
Surr: BFB	103	70-130		%REC	1	8/20/2015 8:50:38 PM	C28360

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Analytical ReportLab Order: **1508875**Date Reported: **9/15/2015****Hall Environmental Analysis Laboratory, Inc.****CLIENT:** Western Refining Southwest, Inc.**Client Sample ID:** MW-67**Project:** RCRA Wells 8-18-15**Collection Date:** 8/18/2015 8:30:00 AM**Lab ID:** 1508875-012C**Matrix:** Aqueous

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D: DIESEL RANGE							Analyst: TOM
Diesel Range Organics (DRO)	0.21	0.20		mg/L	1	8/19/2015 9:32:35 PM	20869
Motor Oil Range Organics (MRO)	ND	2.5		mg/L	1	8/19/2015 9:32:35 PM	20869
Surr: DNOP	109	84.6-165		%REC	1	8/19/2015 9:32:35 PM	20869

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order: 1508875

Date Reported: 9/15/2015

CLIENT: Western Refining Southwest, Inc.
Project: RCRA Wells 8-18-15
Lab ID: 1508875-012D

Client Sample ID: MW-67
Collection Date: 8/18/2015 8:30:00 AM
Matrix: Aqueous

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
CARBON DIOXIDE							Analyst: MRA
Total Carbon Dioxide	310	1.0	H	mg CO2/L	1	8/21/2015 9:57:27 PM	R28401
EPA METHOD 300.0: ANIONS							Analyst: LGT
Fluoride	0.62	0.10		mg/L	1	8/19/2015 11:38:54 PM	R28334
Chloride	14	0.50		mg/L	1	8/19/2015 11:38:54 PM	R28334
Nitrogen, Nitrite (As N)	ND	0.10		mg/L	1	8/19/2015 11:38:54 PM	R28334
Bromide	0.13	0.10		mg/L	1	8/19/2015 11:38:54 PM	R28334
Nitrogen, Nitrate (As N)	13	2.0	*	mg/L	20	8/19/2015 11:51:18 PM	R28334
Phosphorus, Orthophosphate (As P)	ND	0.50		mg/L	1	8/19/2015 11:38:54 PM	R28334
Sulfate	240	10		mg/L	20	8/19/2015 11:51:18 PM	R28334
SM2510B: SPECIFIC CONDUCTANCE							Analyst: MRA
Conductivity	1200	0.010		µmhos/cm	1	8/21/2015 9:57:27 PM	R28401
SM2320B: ALKALINITY							Analyst: MRA
Bicarbonate (As CaCO3)	342.5	20.00		mg/L CaCO3	1	8/21/2015 9:57:27 PM	R28401
Carbonate (As CaCO3)	ND	2.000		mg/L CaCO3	1	8/21/2015 9:57:27 PM	R28401
Total Alkalinity (as CaCO3)	342.5	20.00		mg/L CaCO3	1	8/21/2015 9:57:27 PM	R28401
SM2540C MOD: TOTAL DISSOLVED SOLIDS							Analyst: KS
Total Dissolved Solids	854	40.0	*D	mg/L	1	8/20/2015 3:44:00 PM	20886

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Analytical ReportLab Order: **1508875**Date Reported: **9/15/2015****Hall Environmental Analysis Laboratory, Inc.**

CLIENT: Western Refining Southwest, Inc.
Project: RCRA Wells 8-18-15
Lab ID: 1508875-012E

Client Sample ID: MW-67
Collection Date: 8/18/2015 8:30:00 AM
Matrix: Aqueous

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 7470: MERCURY							Analyst: JLF
Mercury	ND	0.00020		mg/L	1	8/26/2015 4:35:16 PM	20989
EPA 6010B: TOTAL RECOVERABLE METALS							Analyst: MED
Arsenic	ND	0.020		mg/L	1	8/25/2015 1:39:12 PM	20922
Barium	0.12	0.020		mg/L	1	8/25/2015 1:39:12 PM	20922
Cadmium	ND	0.0020		mg/L	1	8/25/2015 1:39:12 PM	20922
Chromium	ND	0.0060		mg/L	1	8/25/2015 1:39:12 PM	20922
Lead	ND	0.0050		mg/L	1	8/25/2015 1:39:12 PM	20922
Selenium	ND	0.050		mg/L	1	8/25/2015 1:39:12 PM	20922
Silver	ND	0.0050		mg/L	1	8/25/2015 1:39:12 PM	20922

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order: 1508875

Date Reported: 9/15/2015

CLIENT: Western Refining Southwest, Inc.
Project: RCRA Wells 8-18-15
Lab ID: 1508875-012F

Client Sample ID: MW-67
Collection Date: 8/18/2015 8:30:00 AM
Matrix: Aqueous

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 7470: MERCURY							Analyst: JLF
Mercury	ND	0.00020		mg/L	1	8/27/2015 4:37:54 PM	21012
EPA METHOD 6010B: DISSOLVED METALS							Analyst: MED
Arsenic	ND	0.020		mg/L	1	8/24/2015 2:03:42 PM	B28416
Barium	0.039	0.020		mg/L	1	8/24/2015 2:03:42 PM	B28416
Cadmium	ND	0.0020		mg/L	1	8/24/2015 2:03:42 PM	B28416
Calcium	150	5.0		mg/L	5	8/24/2015 3:32:15 PM	B28416
Chromium	ND	0.0060		mg/L	1	8/24/2015 2:03:42 PM	B28416
Copper	ND	0.0060		mg/L	1	8/24/2015 2:03:42 PM	B28416
Iron	ND	0.020		mg/L	1	8/24/2015 2:03:42 PM	B28416
Lead	ND	0.0050		mg/L	1	8/24/2015 2:03:42 PM	B28416
Magnesium	31	1.0		mg/L	1	8/25/2015 12:39:57 PM	A28442
Manganese	0.38	0.0020		mg/L	1	8/24/2015 2:03:42 PM	B28416
Potassium	3.0	1.0		mg/L	1	8/24/2015 2:03:42 PM	B28416
Selenium	ND	0.050		mg/L	1	8/24/2015 2:03:42 PM	B28416
Silver	ND	0.0050		mg/L	1	8/24/2015 2:03:42 PM	B28416
Sodium	74	1.0		mg/L	1	8/24/2015 2:03:42 PM	B28416
Uranium	ND	0.10		mg/L	1	8/24/2015 2:03:42 PM	B28416
Zinc	0.025	0.020		mg/L	1	8/24/2015 2:03:42 PM	B28416

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Analytical Report

Lab Order: 1508875

Hall Environmental Analysis Laboratory, Inc.

Date Reported: 9/15/2015

CLIENT: Western Refining Southwest, Inc.
Project: RCRA Wells 8-18-15
Lab ID: 1508875-013A

Client Sample ID: MW-68
Collection Date: 8/18/2015 8:20:00 AM
Matrix: Aqueous

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES				Analyst: DJF			
Benzene	ND	1.0		µg/L	1	8/20/2015 9:18:10 PM	R28360
Toluene	ND	1.0		µg/L	1	8/20/2015 9:18:10 PM	R28360
Ethylbenzene	ND	1.0		µg/L	1	8/20/2015 9:18:10 PM	R28360
Methyl tert-butyl ether (MTBE)	ND	1.0		µg/L	1	8/20/2015 9:18:10 PM	R28360
1,2,4-Trimethylbenzene	ND	1.0		µg/L	1	8/20/2015 9:18:10 PM	R28360
1,3,5-Trimethylbenzene	ND	1.0		µg/L	1	8/20/2015 9:18:10 PM	R28360
1,2-Dichloroethane (EDC)	ND	1.0		µg/L	1	8/20/2015 9:18:10 PM	R28360
1,2-Dibromoethane (EDB)	ND	1.0		µg/L	1	8/20/2015 9:18:10 PM	R28360
Naphthalene	ND	2.0		µg/L	1	8/20/2015 9:18:10 PM	R28360
1-Methylnaphthalene	ND	4.0		µg/L	1	8/20/2015 9:18:10 PM	R28360
2-Methylnaphthalene	ND	4.0		µg/L	1	8/20/2015 9:18:10 PM	R28360
Acetone	ND	10		µg/L	1	8/20/2015 9:18:10 PM	R28360
Bromobenzene	ND	1.0		µg/L	1	8/20/2015 9:18:10 PM	R28360
Bromodichloromethane	ND	1.0		µg/L	1	8/20/2015 9:18:10 PM	R28360
Bromoform	ND	1.0		µg/L	1	8/20/2015 9:18:10 PM	R28360
Bromomethane	ND	3.0		µg/L	1	8/20/2015 9:18:10 PM	R28360
2-Butanone	ND	10		µg/L	1	8/20/2015 9:18:10 PM	R28360
Carbon disulfide	ND	10		µg/L	1	8/20/2015 9:18:10 PM	R28360
Carbon Tetrachloride	ND	1.0		µg/L	1	8/20/2015 9:18:10 PM	R28360
Chlorobenzene	ND	1.0		µg/L	1	8/20/2015 9:18:10 PM	R28360
Chloroethane	ND	2.0		µg/L	1	8/20/2015 9:18:10 PM	R28360
Chloroform	ND	1.0		µg/L	1	8/20/2015 9:18:10 PM	R28360
Chloromethane	ND	3.0		µg/L	1	8/20/2015 9:18:10 PM	R28360
2-Chlorotoluene	ND	1.0		µg/L	1	8/20/2015 9:18:10 PM	R28360
4-Chlorotoluene	ND	1.0		µg/L	1	8/20/2015 9:18:10 PM	R28360
cis-1,2-DCE	ND	1.0		µg/L	1	8/20/2015 9:18:10 PM	R28360
cis-1,3-Dichloropropene	ND	1.0		µg/L	1	8/20/2015 9:18:10 PM	R28360
1,2-Dibromo-3-chloropropane	ND	2.0		µg/L	1	8/20/2015 9:18:10 PM	R28360
Dibromochloromethane	ND	1.0		µg/L	1	8/20/2015 9:18:10 PM	R28360
Dibromomethane	ND	1.0		µg/L	1	8/20/2015 9:18:10 PM	R28360
1,2-Dichlorobenzene	ND	1.0		µg/L	1	8/20/2015 9:18:10 PM	R28360
1,3-Dichlorobenzene	ND	1.0		µg/L	1	8/20/2015 9:18:10 PM	R28360
1,4-Dichlorobenzene	ND	1.0		µg/L	1	8/20/2015 9:18:10 PM	R28360
Dichlorodifluoromethane	ND	1.0		µg/L	1	8/20/2015 9:18:10 PM	R28360
1,1-Dichloroethane	ND	1.0		µg/L	1	8/20/2015 9:18:10 PM	R28360
1,1-Dichloroethene	ND	1.0		µg/L	1	8/20/2015 9:18:10 PM	R28360
1,2-Dichloropropane	ND	1.0		µg/L	1	8/20/2015 9:18:10 PM	R28360
1,3-Dichloropropane	ND	1.0		µg/L	1	8/20/2015 9:18:10 PM	R28360
2,2-Dichloropropane	ND	2.0		µg/L	1	8/20/2015 9:18:10 PM	R28360
1,1-Dichloropropene	ND	1.0		µg/L	1	8/20/2015 9:18:10 PM	R28360
Hexachlorobutadiene	ND	1.0		µg/L	1	8/20/2015 9:18:10 PM	R28360

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Analytical Report

Lab Order: 1508875

Hall Environmental Analysis Laboratory, Inc.

Date Reported: 9/15/2015

CLIENT: Western Refining Southwest, Inc.
Project: RCRA Wells 8-18-15
Lab ID: 1508875-013A

Client Sample ID: MW-68
Collection Date: 8/18/2015 8:20:00 AM
Matrix: Aqueous

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES				Analyst: DJF			
2-Hexanone	ND	10		µg/L	1	8/20/2015 9:18:10 PM	R28360
Isopropylbenzene	ND	1.0		µg/L	1	8/20/2015 9:18:10 PM	R28360
4-Isopropyltoluene	ND	1.0		µg/L	1	8/20/2015 9:18:10 PM	R28360
4-Methyl-2-pentanone	ND	10		µg/L	1	8/20/2015 9:18:10 PM	R28360
Methylene Chloride	ND	3.0		µg/L	1	8/20/2015 9:18:10 PM	R28360
n-Butylbenzene	ND	3.0		µg/L	1	8/20/2015 9:18:10 PM	R28360
n-Propylbenzene	ND	1.0		µg/L	1	8/20/2015 9:18:10 PM	R28360
sec-Butylbenzene	ND	1.0		µg/L	1	8/20/2015 9:18:10 PM	R28360
Styrene	ND	1.0		µg/L	1	8/20/2015 9:18:10 PM	R28360
tert-Butylbenzene	ND	1.0		µg/L	1	8/20/2015 9:18:10 PM	R28360
1,1,1,2-Tetrachloroethane	ND	1.0		µg/L	1	8/20/2015 9:18:10 PM	R28360
1,1,2,2-Tetrachloroethane	ND	2.0		µg/L	1	8/20/2015 9:18:10 PM	R28360
Tetrachloroethene (PCE)	ND	1.0		µg/L	1	8/20/2015 9:18:10 PM	R28360
trans-1,2-DCE	ND	1.0		µg/L	1	8/20/2015 9:18:10 PM	R28360
trans-1,3-Dichloropropene	ND	1.0		µg/L	1	8/20/2015 9:18:10 PM	R28360
1,2,3-Trichlorobenzene	ND	1.0		µg/L	1	8/20/2015 9:18:10 PM	R28360
1,2,4-Trichlorobenzene	ND	1.0		µg/L	1	8/20/2015 9:18:10 PM	R28360
1,1,1-Trichloroethane	ND	1.0		µg/L	1	8/20/2015 9:18:10 PM	R28360
1,1,2-Trichloroethane	ND	1.0		µg/L	1	8/20/2015 9:18:10 PM	R28360
Trichloroethene (TCE)	ND	1.0		µg/L	1	8/20/2015 9:18:10 PM	R28360
Trichlorofluoromethane	ND	1.0		µg/L	1	8/20/2015 9:18:10 PM	R28360
1,2,3-Trichloropropane	ND	2.0		µg/L	1	8/20/2015 9:18:10 PM	R28360
Vinyl chloride	ND	1.0		µg/L	1	8/20/2015 9:18:10 PM	R28360
Xylenes, Total	ND	1.5		µg/L	1	8/20/2015 9:18:10 PM	R28360
Surr: 1,2-Dichloroethane-d4	94.7	70-130		%REC	1	8/20/2015 9:18:10 PM	R28360
Surr: 4-Bromofluorobenzene	111	70-130		%REC	1	8/20/2015 9:18:10 PM	R28360
Surr: Dibromofluoromethane	108	70-130		%REC	1	8/20/2015 9:18:10 PM	R28360
Surr: Toluene-d8	96.8	70-130		%REC	1	8/20/2015 9:18:10 PM	R28360

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order: 1508875

Date Reported: 9/15/2015

CLIENT: Western Refining Southwest, Inc.
Project: RCRA Wells 8-18-15
Lab ID: 1508875-013B

Client Sample ID: MW-68
Collection Date: 8/18/2015 8:20:00 AM
Matrix: Aqueous

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D: GASOLINE RANGE							Analyst: DJF
Gasoline Range Organics (GRO)	ND	0.050		mg/L	1	8/20/2015 9:18:10 PM	C28360
Surr: BFB	98.3	70-130		%REC	1	8/20/2015 9:18:10 PM	C28360

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Analytical ReportLab Order: **1508875**Date Reported: **9/15/2015****Hall Environmental Analysis Laboratory, Inc.****CLIENT:** Western Refining Southwest, Inc.**Client Sample ID:** MW-68**Project:** RCRA Wells 8-18-15**Collection Date:** 8/18/2015 8:20:00 AM**Lab ID:** 1508875-013C**Matrix:** Aqueous

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D: DIESEL RANGE							Analyst: TOM
Diesel Range Organics (DRO)	ND	0.20		mg/L	1	8/19/2015 9:53:59 PM	20869
Motor Oil Range Organics (MRO)	ND	2.5		mg/L	1	8/19/2015 9:53:59 PM	20869
Surr: DNOP	115	84.6-165		%REC	1	8/19/2015 9:53:59 PM	20869

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order: 1508875

Date Reported: 9/15/2015

CLIENT: Western Refining Southwest, Inc.
Project: RCRA Wells 8-18-15
Lab ID: 1508875-013D

Client Sample ID: MW-68
Collection Date: 8/18/2015 8:20:00 AM
Matrix: Aqueous

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
CARBON DIOXIDE							Analyst: MRA
Total Carbon Dioxide	180	1.0	H	mg CO2/L	1	8/21/2015 10:12:47 PM	R28401
EPA METHOD 300.0: ANIONS							Analyst: LGT
Fluoride	0.35	0.10		mg/L	1	8/20/2015 12:03:43 AM	R28334
Chloride	42	10		mg/L	20	8/20/2015 12:16:08 AM	R28334
Nitrogen, Nitrite (As N)	ND	0.10		mg/L	1	8/20/2015 12:03:43 AM	R28334
Bromide	0.23	0.10		mg/L	1	8/20/2015 12:03:43 AM	R28334
Nitrogen, Nitrate (As N)	7.6	0.10		mg/L	1	8/20/2015 12:03:43 AM	R28334
Phosphorus, Orthophosphate (As P')	ND	0.50		mg/L	1	8/20/2015 12:03:43 AM	R28334
Sulfate	280	10	*	mg/L	20	8/20/2015 12:16:08 AM	R28334
SM2510B: SPECIFIC CONDUCTANCE							Analyst: MRA
Conductivity	1100	0.010		µmhos/cm	1	8/21/2015 10:12:47 PM	R28401
SM2320B: ALKALINITY							Analyst: MRA
Bicarbonate (As CaCO3)	200.2	20.00		mg/L CaCO3	1	8/21/2015 10:12:47 PM	R28401
Carbonate (As CaCO3)	ND	2.000		mg/L CaCO3	1	8/21/2015 10:12:47 PM	R28401
Total Alkalinity (as CaCO3)	200.2	20.00		mg/L CaCO3	1	8/21/2015 10:12:47 PM	R28401
SM2540C MOD: TOTAL DISSOLVED SOLIDS							Analyst: KS
Total Dissolved Solids	748	20.0	*	mg/L	1	8/20/2015 3:44:00 PM	20886

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order: 1508875

Date Reported: 9/15/2015

CLIENT: Western Refining Southwest, Inc.
Project: RCRA Wells 8-18-15
Lab ID: 1508875-013E

Client Sample ID: MW-68
Collection Date: 8/18/2015 8:20:00 AM
Matrix: Aqueous

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 7470: MERCURY							Analyst: JLF
Mercury	ND	0.00020		mg/L	1	8/26/2015 4:37:21 PM	20989
EPA 6010B: TOTAL RECOVERABLE METALS							Analyst: MED
Arsenic	ND	0.020		mg/L	1	8/25/2015 1:40:47 PM	20922
Barium	0.038	0.020		mg/L	1	8/25/2015 1:40:47 PM	20922
Cadmium	ND	0.0020		mg/L	1	8/25/2015 1:40:47 PM	20922
Chromium	ND	0.0060		mg/L	1	8/25/2015 1:40:47 PM	20922
Lead	ND	0.0050		mg/L	1	8/25/2015 1:40:47 PM	20922
Selenium	ND	0.050		mg/L	1	8/25/2015 1:40:47 PM	20922
Silver	ND	0.0050		mg/L	1	8/25/2015 1:40:47 PM	20922

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order: 1508875

Date Reported: 9/15/2015

CLIENT: Western Refining Southwest, Inc.
Project: RCRA Wells 8-18-15
Lab ID: 1508875-013F

Client Sample ID: MW-68
Collection Date: 8/18/2015 8:20:00 AM
Matrix: Aqueous

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 7470: MERCURY				Analyst: JLF			
Mercury	ND	0.00020		mg/L	1	8/27/2015 4:40:02 PM	21012
EPA METHOD 6010B: DISSOLVED METALS				Analyst: MED			
Arsenic	ND	0.020		mg/L	1	8/24/2015 2:05:26 PM	B28416
Barium	0.022	0.020		mg/L	1	8/24/2015 2:05:26 PM	B28416
Cadmium	ND	0.0020		mg/L	1	8/24/2015 2:05:26 PM	B28416
Calcium	93	1.0		mg/L	1	8/24/2015 2:05:26 PM	B28416
Chromium	ND	0.0060		mg/L	1	8/24/2015 2:05:26 PM	B28416
Copper	ND	0.0060		mg/L	1	8/24/2015 2:05:26 PM	B28416
Iron	ND	0.020		mg/L	1	8/24/2015 2:05:26 PM	B28416
Lead	ND	0.0050		mg/L	1	8/24/2015 2:05:26 PM	B28416
Magnesium	24	1.0		mg/L	1	8/25/2015 12:41:40 PM	A28442
Manganese	0.0045	0.0020		mg/L	1	8/24/2015 2:05:26 PM	B28416
Potassium	2.6	1.0		mg/L	1	8/24/2015 2:05:26 PM	B28416
Selenium	ND	0.050		mg/L	1	8/24/2015 2:05:26 PM	B28416
Silver	ND	0.0050		mg/L	1	8/24/2015 2:05:26 PM	B28416
Sodium	110	2.0		mg/L	2	8/24/2015 3:34:07 PM	B28416
Uranium	ND	0.10		mg/L	1	8/24/2015 2:05:26 PM	B28416
Zinc	0.027	0.020		mg/L	1	8/24/2015 2:05:26 PM	B28416

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Analytical Report

Lab Order: 1508875

Hall Environmental Analysis Laboratory, Inc.

Date Reported: 9/15/2015

CLIENT: Western Refining Southwest, Inc.
Project: RCRA Wells 8-18-15
Lab ID: 1508875-014A

Client Sample ID: TRIP BLANK
Collection Date:
Matrix: Trip Blank

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES				Analyst: DJF			
Benzene	ND	1.0		µg/L	1	8/21/2015 12:03:00 AM	R28360
Toluene	ND	1.0		µg/L	1	8/21/2015 12:03:00 AM	R28360
Ethylbenzene	ND	1.0		µg/L	1	8/21/2015 12:03:00 AM	R28360
Methyl tert-butyl ether (MTBE)	ND	1.0		µg/L	1	8/21/2015 12:03:00 AM	R28360
1,2,4-Trimethylbenzene	ND	1.0		µg/L	1	8/21/2015 12:03:00 AM	R28360
1,3,5-Trimethylbenzene	ND	1.0		µg/L	1	8/21/2015 12:03:00 AM	R28360
1,2-Dichloroethane (EDC)	ND	1.0		µg/L	1	8/21/2015 12:03:00 AM	R28360
1,2-Dibromoethane (EDB)	ND	1.0		µg/L	1	8/21/2015 12:03:00 AM	R28360
Naphthalene	ND	2.0		µg/L	1	8/21/2015 12:03:00 AM	R28360
1-Methylnaphthalene	ND	4.0		µg/L	1	8/21/2015 12:03:00 AM	R28360
2-Methylnaphthalene	ND	4.0		µg/L	1	8/21/2015 12:03:00 AM	R28360
Acetone	ND	10		µg/L	1	8/21/2015 12:03:00 AM	R28360
Bromobenzene	ND	1.0		µg/L	1	8/21/2015 12:03:00 AM	R28360
Bromodichloromethane	ND	1.0		µg/L	1	8/21/2015 12:03:00 AM	R28360
Bromoform	ND	1.0		µg/L	1	8/21/2015 12:03:00 AM	R28360
Bromomethane	ND	3.0		µg/L	1	8/21/2015 12:03:00 AM	R28360
2-Butanone	ND	10		µg/L	1	8/21/2015 12:03:00 AM	R28360
Carbon disulfide	ND	10		µg/L	1	8/21/2015 12:03:00 AM	R28360
Carbon Tetrachloride	ND	1.0		µg/L	1	8/21/2015 12:03:00 AM	R28360
Chlorobenzene	ND	1.0		µg/L	1	8/21/2015 12:03:00 AM	R28360
Chloroethane	ND	2.0		µg/L	1	8/21/2015 12:03:00 AM	R28360
Chloroform	ND	1.0		µg/L	1	8/21/2015 12:03:00 AM	R28360
Chloromethane	ND	3.0		µg/L	1	8/21/2015 12:03:00 AM	R28360
2-Chlorotoluene	ND	1.0		µg/L	1	8/21/2015 12:03:00 AM	R28360
4-Chlorotoluene	ND	1.0		µg/L	1	8/21/2015 12:03:00 AM	R28360
cis-1,2-DCE	ND	1.0		µg/L	1	8/21/2015 12:03:00 AM	R28360
cis-1,3-Dichloropropene	ND	1.0		µg/L	1	8/21/2015 12:03:00 AM	R28360
1,2-Dibromo-3-chloropropane	ND	2.0		µg/L	1	8/21/2015 12:03:00 AM	R28360
Dibromochloromethane	ND	1.0		µg/L	1	8/21/2015 12:03:00 AM	R28360
Dibromomethane	ND	1.0		µg/L	1	8/21/2015 12:03:00 AM	R28360
1,2-Dichlorobenzene	ND	1.0		µg/L	1	8/21/2015 12:03:00 AM	R28360
1,3-Dichlorobenzene	ND	1.0		µg/L	1	8/21/2015 12:03:00 AM	R28360
1,4-Dichlorobenzene	ND	1.0		µg/L	1	8/21/2015 12:03:00 AM	R28360
Dichlorodifluoromethane	ND	1.0		µg/L	1	8/21/2015 12:03:00 AM	R28360
1,1-Dichloroethane	ND	1.0		µg/L	1	8/21/2015 12:03:00 AM	R28360
1,1-Dichloroethene	ND	1.0		µg/L	1	8/21/2015 12:03:00 AM	R28360
1,2-Dichloropropane	ND	1.0		µg/L	1	8/21/2015 12:03:00 AM	R28360
1,3-Dichloropropane	ND	1.0		µg/L	1	8/21/2015 12:03:00 AM	R28360
2,2-Dichloropropane	ND	2.0		µg/L	1	8/21/2015 12:03:00 AM	R28360
1,1-Dichloropropene	ND	1.0		µg/L	1	8/21/2015 12:03:00 AM	R28360
Hexachlorobutadiene	ND	1.0		µg/L	1	8/21/2015 12:03:00 AM	R28360

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
				Page 86 of 105

Analytical Report

Lab Order: 1508875

Date Reported: 9/15/2015

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Southwest, Inc.
Project: RCRA Wells 8-18-15
Lab ID: 1508875-014A

Client Sample ID: TRIP BLANK
Collection Date:
Matrix: Trip Blank

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: DJF
2-Hexanone	ND	10		µg/L	1	8/21/2015 12:03:00 AM	R28360
Isopropylbenzene	ND	1.0		µg/L	1	8/21/2015 12:03:00 AM	R28360
4-Isopropyltoluene	ND	1.0		µg/L	1	8/21/2015 12:03:00 AM	R28360
4-Methyl-2-pentanone	ND	10		µg/L	1	8/21/2015 12:03:00 AM	R28360
Methylene Chloride	ND	3.0		µg/L	1	8/21/2015 12:03:00 AM	R28360
n-Butylbenzene	ND	3.0		µg/L	1	8/21/2015 12:03:00 AM	R28360
n-Propylbenzene	ND	1.0		µg/L	1	8/21/2015 12:03:00 AM	R28360
sec-Butylbenzene	ND	1.0		µg/L	1	8/21/2015 12:03:00 AM	R28360
Styrene	ND	1.0		µg/L	1	8/21/2015 12:03:00 AM	R28360
tert-Butylbenzene	ND	1.0		µg/L	1	8/21/2015 12:03:00 AM	R28360
1,1,1,2-Tetrachloroethane	ND	1.0		µg/L	1	8/21/2015 12:03:00 AM	R28360
1,1,2,2-Tetrachloroethane	ND	2.0		µg/L	1	8/21/2015 12:03:00 AM	R28360
Tetrachloroethene (PCE)	ND	1.0		µg/L	1	8/21/2015 12:03:00 AM	R28360
trans-1,2-DCE	ND	1.0		µg/L	1	8/21/2015 12:03:00 AM	R28360
trans-1,3-Dichloropropene	ND	1.0		µg/L	1	8/21/2015 12:03:00 AM	R28360
1,2,3-Trichlorobenzene	ND	1.0		µg/L	1	8/21/2015 12:03:00 AM	R28360
1,2,4-Trichlorobenzene	ND	1.0		µg/L	1	8/21/2015 12:03:00 AM	R28360
1,1,1-Trichloroethane	ND	1.0		µg/L	1	8/21/2015 12:03:00 AM	R28360
1,1,2-Trichloroethane	ND	1.0		µg/L	1	8/21/2015 12:03:00 AM	R28360
Trichloroethene (TCE)	ND	1.0		µg/L	1	8/21/2015 12:03:00 AM	R28360
Trichlorofluoromethane	ND	1.0		µg/L	1	8/21/2015 12:03:00 AM	R28360
1,2,3-Trichloropropane	ND	2.0		µg/L	1	8/21/2015 12:03:00 AM	R28360
Vinyl chloride	ND	1.0		µg/L	1	8/21/2015 12:03:00 AM	R28360
Xylenes, Total	ND	1.5		µg/L	1	8/21/2015 12:03:00 AM	R28360
Surr: 1,2-Dichloroethane-d4	100	70-130		%REC	1	8/21/2015 12:03:00 AM	R28360
Surr: 4-Bromofluorobenzene	113	70-130		%REC	1	8/21/2015 12:03:00 AM	R28360
Surr: Dibromofluoromethane	114	70-130		%REC	1	8/21/2015 12:03:00 AM	R28360
Surr: Toluene-d8	96.5	70-130		%REC	1	8/21/2015 12:03:00 AM	R28360

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order: 1508875

Date Reported: 9/15/2015

CLIENT: Western Refining Southwest, Inc.
Project: RCRA Wells 8-18-15
Lab ID: 1508875-014B

Client Sample ID: TRIP BLANK
Collection Date:
Matrix: Trip Blank

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D: GASOLINE RANGE							Analyst: DJF
Gasoline Range Organics (GRO)	ND	0.050		mg/L	1	8/21/2015 12:03:00 AM	C28360
Surr: BFB	99.5	70-130		%REC	1	8/21/2015 12:03:00 AM	C28360

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1508875

15-Sep-15

Client: Western Refining Southwest, Inc.

Project: RCRA Wells 8-18-15

Sample ID MB	SampType: MBLK		TestCode: EPA Method 300.0: Anions							
Client ID: PBW	Batch ID: R28334		RunNo: 28334							
Prep Date:	Analysis Date: 8/19/2015		SeqNo: 855516		Units: mg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	ND	0.10								
Chloride	ND	0.50								
Nitrogen, Nitrite (As N)	ND	0.10								
Bromide	ND	0.10								
Nitrogen, Nitrate (As N)	ND	0.10								
Phosphorus, Orthophosphate (As P)	ND	0.50								
Sulfate	ND	0.50								

Sample ID LCS	SampType: LCS		TestCode: EPA Method 300.0: Anions							
Client ID: LCSW	Batch ID: R28334		RunNo: 28334							
Prep Date:	Analysis Date: 8/19/2015		SeqNo: 855517		Units: mg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	0.54	0.10	0.5000	0	107	90	110			
Chloride	5.1	0.50	5.000	0	101	90	110			
Nitrogen, Nitrite (As N)	1.0	0.10	1.000	0	103	90	110			
Bromide	2.6	0.10	2.500	0	103	90	110			
Nitrogen, Nitrate (As N)	2.7	0.10	2.500	0	106	90	110			
Phosphorus, Orthophosphate (As P)	5.2	0.50	5.000	0	103	90	110			
Sulfate	10	0.50	10.00	0	103	90	110			

Sample ID 1508875-001DMS	SampType: MS		TestCode: EPA Method 300.0: Anions							
Client ID: MW-51	Batch ID: R28334		RunNo: 28334							
Prep Date:	Analysis Date: 8/19/2015		SeqNo: 855519		Units: mg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	0.98	0.10	0.5000	0.5231	92.1	75.3	111			
Chloride	13	0.50	5.000	8.285	102	81.2	116			
Nitrogen, Nitrite (As N)	0.96	0.10	1.000	0.03350	93.0	77.1	110			
Bromide	2.4	0.10	2.500	0	96.4	84.6	106			
Nitrogen, Nitrate (As N)	2.7	0.10	2.500	0.3450	95.5	87.3	111			
Phosphorus, Orthophosphate (As P)	4.7	0.50	5.000	0	94.9	76.5	106			

Sample ID 1508875-001DMSD	SampType: MSD		TestCode: EPA Method 300.0: Anions							
Client ID: MW-51	Batch ID: R28334		RunNo: 28334							
Prep Date:	Analysis Date: 8/19/2015		SeqNo: 855520		Units: mg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	0.98	0.10	0.5000	0.5231	92.4	75.3	111	0.152	20	
Chloride	13	0.50	5.000	8.285	102	81.2	116	0.161	20	

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S % Recovery outside of range due to dilution or matrix
- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1508875

15-Sep-15

Client: Western Refining Southwest, Inc.

Project: RCRA Wells 8-18-15

Sample ID	1508875-001DMSD		SampType:	MSD		TestCode:	EPA Method 300.0: Anions				
Client ID:	MW-51		Batch ID:	R28334		RunNo:	28334				
Prep Date:			Analysis Date:	8/19/2015		SeqNo:	855520		Units: mg/L		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Nitrogen, Nitrite (As N)	0.97	0.10	1.000	0.03350	93.6	77.1	110	0.610	20		
Bromide	2.4	0.10	2.500	0	97.0	84.6	106	0.646	20		
Nitrogen, Nitrate (As N)	2.7	0.10	2.500	0.3450	95.9	87.3	111	0.409	20		
Phosphorus, Orthophosphate (As P)	4.8	0.50	5.000	0	95.7	76.5	106	0.774	20		

Sample ID	MB	SampType: MBLK		TestCode: EPA Method 300.0: Anions						
Client ID:	PBW	Batch ID: R28432		RunNo: 28432						
Prep Date:		Analysis Date: 8/24/2015		SeqNo: 859070		Units: mg/L				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	0.50								
Sulfate	ND	0.50								

Sample ID	LCS		SampType: LCS		TestCode: EPA Method 300.0: Anions					
Client ID:	LCSW		Batch ID: R28432		RunNo: 28432					
Prep Date:			Analysis Date: 8/24/2015		SeqNo: 859071		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	4.9	0.50	5.000	0	97.5	90	110			
Sulfate	10	0.50	10.00	0	100	90	110			

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1508875

15-Sep-15

Client: Western Refining Southwest, Inc.

Project: RCRA Wells 8-18-15

Sample ID	MB-20869		SampType: MBLK		TestCode: EPA Method 8015D: Diesel Range					
Client ID:	PBW		Batch ID: 20869		RunNo: 28340					
Prep Date:	8/19/2015		Analysis Date: 8/19/2015		SeqNo: 855831		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	0.20								
Motor Oil Range Organics (MRO)	ND	2.5								
Surr: DNOP	0.47		0.5000		93.4	84.6	165			

Sample ID	1508875-001CMS		SampType: MS		TestCode: EPA Method 8015D: Diesel Range					
Client ID:	MW-51		Batch ID: 20869		RunNo: 28340					
Prep Date:	8/19/2015		Analysis Date: 8/19/2015		SeqNo: 855835		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	3.1	0.20	2.500	0	124	67.2	210			
Surr: DNOP	0.25		0.2500		99.2	84.6	165			

Sample ID	1508875-001CMSD		SampType: MSD		TestCode: EPA Method 8015D: Diesel Range					
Client ID:	MW-51		Batch ID: 20869		RunNo: 28340					
Prep Date:	8/19/2015		Analysis Date: 8/19/2015		SeqNo: 855836		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	3.2	0.20	2.500	0	127	67.2	210	2.72	33.9	
Surr: DNOP	0.26		0.2500		104	84.6	165	0	0	

Sample ID	LCS-20869		SampType: LCS		TestCode: EPA Method 8015D: Diesel Range					
Client ID:	LCSW		Batch ID: 20869		RunNo: 28339					
Prep Date:	8/19/2015		Analysis Date: 8/20/2015		SeqNo: 856123		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	2.6	0.20	2.500	0	104	67.3	174			
Surr: DNOP	0.23		0.2500		90.8	84.6	165			

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1508875

15-Sep-15

Client: Western Refining Southwest, Inc.

Project: RCRA Wells 8-18-15

Sample ID	rb	SampType:	MBLK	TestCode:	EPA Method 8260: Volatiles Short List					
Client ID:	PBW	Batch ID:	D28360	RunNo:	28360					
Prep Date:		Analysis Date:	8/20/2015	SeqNo:	856633	Units:	µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	1.0								
Toluene	ND	1.0								
Ethylbenzene	ND	1.0								
Xylenes, Total	ND	1.5								
Surr: 1,2-Dichloroethane-d4	9.9		10.00		99.4	70	130			
Surr: 4-Bromofluorobenzene	11		10.00		108	70	130			
Surr: Dibromofluoromethane	11		10.00		114	70	130			
Surr: Toluene-d8	10		10.00		102	70	130			

Sample ID	100ng lcs	SampType:	LCS	TestCode:	EPA Method 8260: Volatiles Short List					
Client ID:	LCSW	Batch ID:	D28360	RunNo:	28360					
Prep Date:		Analysis Date:	8/20/2015	SeqNo:	856634	Units:	µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	21	1.0	20.00	0	107	70	130			
Toluene	21	1.0	20.00	0	103	70	130			
Surr: 1,2-Dichloroethane-d4	9.8		10.00		98.2	70	130			
Surr: 4-Bromofluorobenzene	11		10.00		106	70	130			
Surr: Dibromofluoromethane	11		10.00		110	70	130			
Surr: Toluene-d8	9.7		10.00		96.8	70	130			

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1508875

15-Sep-15

Client: Western Refining Southwest, Inc.

Project: RCRA Wells 8-18-15

Sample ID	rb	SampType: MBLK			TestCode: EPA Method 8260B: VOLATILES					
Client ID:	PBW	Batch ID: R28360			RunNo: 28360					
Prep Date:		Analysis Date: 8/20/2015			SeqNo: 856531	Units: µg/L				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	1.0								
Toluene	ND	1.0								
Ethylbenzene	ND	1.0								
Methyl tert-butyl ether (MTBE)	ND	1.0								
1,2,4-Trimethylbenzene	ND	1.0								
1,3,5-Trimethylbenzene	ND	1.0								
1,2-Dichloroethane (EDC)	ND	1.0								
1,2-Dibromoethane (EDB)	ND	1.0								
Naphthalene	ND	2.0								
1-Methylnaphthalene	ND	4.0								
2-Methylnaphthalene	ND	4.0								
Acetone	ND	10								
Bromobenzene	ND	1.0								
Bromodichloromethane	ND	1.0								
Bromoform	ND	1.0								
Bromomethane	ND	3.0								
2-Butanone	ND	10								
Carbon disulfide	ND	10								
Carbon Tetrachloride	ND	1.0								
Chlorobenzene	ND	1.0								
Chloroethane	ND	2.0								
Chloroform	ND	1.0								
Chloromethane	ND	3.0								
2-Chlorotoluene	ND	1.0								
4-Chlorotoluene	ND	1.0								
cis-1,2-DCE	ND	1.0								
cis-1,3-Dichloropropene	ND	1.0								
1,2-Dibromo-3-chloropropane	ND	2.0								
Dibromochloromethane	ND	1.0								
Dibromomethane	ND	1.0								
1,2-Dichlorobenzene	ND	1.0								
1,3-Dichlorobenzene	ND	1.0								
1,4-Dichlorobenzene	ND	1.0								
Dichlorodifluoromethane	ND	1.0								
1,1-Dichloroethane	ND	1.0								
1,1-Dichloroethene	ND	1.0								
1,2-Dichloropropane	ND	1.0								
1,3-Dichloropropane	ND	1.0								
2,2-Dichloropropane	ND	2.0								

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1508875

15-Sep-15

Client: Western Refining Southwest, Inc.

Project: RCRA Wells 8-18-15

Sample ID	rb	SampType: MBLK				TestCode: EPA Method 8260B: VOLATILES				
Client ID:	PBW	Batch ID: R28360				RunNo: 28360				
Prep Date:		Analysis Date: 8/20/2015				SeqNo: 856531	Units: µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,1-Dichloropropene	ND	1.0								
Hexachlorobutadiene	ND	1.0								
2-Hexanone	ND	10								
Isopropylbenzene	ND	1.0								
4-Isopropyltoluene	ND	1.0								
4-Methyl-2-pentanone	ND	10								
Methylene Chloride	ND	3.0								
n-Butylbenzene	ND	3.0								
n-Propylbenzene	ND	1.0								
sec-Butylbenzene	ND	1.0								
Styrene	ND	1.0								
tert-Butylbenzene	ND	1.0								
1,1,1,2-Tetrachloroethane	ND	1.0								
1,1,2,2-Tetrachloroethane	ND	2.0								
Tetrachloroethene (PCE)	ND	1.0								
trans-1,2-DCE	ND	1.0								
trans-1,3-Dichloropropene	ND	1.0								
1,2,3-Trichlorobenzene	ND	1.0								
1,2,4-Trichlorobenzene	ND	1.0								
1,1,1-Trichloroethane	ND	1.0								
1,1,2-Trichloroethane	ND	1.0								
Trichloroethene (TCE)	ND	1.0								
Trichlorofluoromethane	ND	1.0								
1,2,3-Trichloropropane	ND	2.0								
Vinyl chloride	ND	1.0								
Xylenes, Total	ND	1.5								
Surr: 1,2-Dichloroethane-d4	9.9		10.00		99.4	70	130			
Surr: 4-Bromofluorobenzene	11		10.00		108	70	130			
Surr: Dibromofluoromethane	11		10.00		114	70	130			
Surr: Toluene-d8	10		10.00		102	70	130			

Sample ID	100ng lcs	SampType: LCS				TestCode: EPA Method 8260B: VOLATILES				
Client ID:	LCSW	Batch ID: R28360				RunNo: 28360				
Prep Date:		Analysis Date: 8/20/2015				SeqNo: 856532	Units: µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	21	1.0	20.00	0	107	70	130			
Toluene	21	1.0	20.00	0	103	70	130			
Chlorobenzene	20	1.0	20.00	0	101	70	130			

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1508875

15-Sep-15

Client: Western Refining Southwest, Inc.

Project: RCRA Wells 8-18-15

Sample ID	100ng lcs	SampType: LCS			TestCode: EPA Method 8260B: VOLATILES					
Client ID:	LCSW	Batch ID: R28360			RunNo: 28360					
Prep Date:		Analysis Date: 8/20/2015			SeqNo: 856532		Units: µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,1-Dichloroethene	21	1.0	20.00	0	106	70	130			
Trichloroethene (TCE)	21	1.0	20.00	0	106	70	130			
Surr: 1,2-Dichloroethane-d4	9.8		10.00		98.2	70	130			
Surr: 4-Bromofluorobenzene	11		10.00		106	70	130			
Surr: Dibromofluoromethane	11		10.00		110	70	130			
Surr: Toluene-d8	9.7		10.00		96.8	70	130			

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1508875

15-Sep-15

Client: Western Refining Southwest, Inc.

Project: RCRA Wells 8-18-15

Sample ID	MB-20989		SampType: MBLK		TestCode: EPA Method 7470: Mercury					
Client ID:	PBW		Batch ID: 20989		RunNo: 28479					
Prep Date:	8/26/2015		Analysis Date: 8/26/2015		SeqNo: 860872		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercurv	ND	0.00020								

Sample ID	LCS-20989			SampType:	LCS		TestCode:	EPA Method 7470: Mercury			
Client ID:	LCSW			Batch ID:	20989		RunNo:	28479			
Prep Date:	8/26/2015			Analysis Date:	8/26/2015		SeqNo:	860873		Units:	mg/L
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Mercury	0.0060	0.00020	0.005000	0	119	80	120				

Sample ID	1508875-001EMS		SampType: MS		TestCode: EPA Method 7470: Mercury					
Client ID:	MW-51		Batch ID: 20989		RunNo: 28479					
Prep Date:	8/26/2015		Analysis Date: 8/26/2015		SeqNo: 860875		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.0058	0.00020	0.005000	0	116	75	125			

Sample ID	1508875-001EMSD			SampType:	MSD		TestCode:	EPA Method 7470: Mercury			
Client ID:	MW-51			Batch ID:	20989		RunNo:	28479			
Prep Date:	8/26/2015			Analysis Date:	8/26/2015		SeqNo:	860876		Units:	mg/L
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Mercury	0.0059	0.00020	0.005000	0	117	75	125	1.50	20		

Sample ID	MB-21012		SampType: MBLK		TestCode: EPA Method 7470: Mercury					
Client ID:	PBW		Batch ID: 21012		RunNo: 28507					
Prep Date:	8/27/2015		Analysis Date: 8/27/2015		SeqNo: 862020		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	ND	0.00020								

Sample ID	LCS-21012		SampType: LCS		TestCode: EPA Method 7470: Mercury					
Client ID:	LCSW		Batch ID: 21012		RunNo: 28507					
Prep Date:	8/27/2015		Analysis Date: 8/27/2015		SeqNo: 862021		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.0052	0.00020	0.005000	0	104	80	120			

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1508875

15-Sep-15

Client: Western Refining Southwest, Inc.

Project: RCRA Wells 8-18-15

Sample ID	1508875-013FMS	SampType:	MS	TestCode:	EPA Method 7470: Mercury					
Client ID:	MW-68	Batch ID:	21012	RunNo:	28507					
Prep Date:	8/27/2015	Analysis Date:	8/27/2015	SeqNo:	862031	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.0045	0.00020	0.005000	0	90.9	75	125			

Sample ID	1508875-013FMSD	SampType:	MSD	TestCode:	EPA Method 7470: Mercury					
Client ID:	MW-68	Batch ID:	21012	RunNo:	28507					
Prep Date:	8/27/2015	Analysis Date:	8/27/2015	SeqNo:	862032	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.0045	0.00020	0.005000	0	90.0	75	125	0.932	20	

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1508875

15-Sep-15

Client: Western Refining Southwest, Inc.

Project: RCRA Wells 8-18-15

Sample ID	MB	SampType:	MBLK	TestCode:	EPA Method 6010B: Dissolved Metals					
Client ID:	PBW	Batch ID:	B28416	RunNo:	28416					
Prep Date:		Analysis Date:	8/24/2015	SeqNo:	858448	Units:	mg/L			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	ND	0.020								
Barium	ND	0.020								
Cadmium	ND	0.0020								
Calcium	ND	1.0								
Chromium	ND	0.0060								
Copper	ND	0.0060								
Iron	ND	0.020								
Lead	ND	0.0050								
Manganese	ND	0.0020								
Potassium	ND	1.0								
Selenium	ND	0.050								
Silver	ND	0.0050								
Sodium	ND	1.0								
Uranium	ND	0.10								
Zinc	ND	0.020								

Sample ID	LCS	SampType:	LCS	TestCode:	EPA Method 6010B: Dissolved Metals					
Client ID:	LCSW	Batch ID:	B28416	RunNo:	28416					
Prep Date:		Analysis Date:	8/24/2015	SeqNo:	858449	Units:	mg/L			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	0.50	0.020	0.5000	0	101	80	120			
Barium	0.48	0.020	0.5000	0	96.6	80	120			
Cadmium	0.49	0.0020	0.5000	0	97.9	80	120			
Calcium	56	1.0	50.00	0	112	80	120			
Chromium	0.48	0.0060	0.5000	0	95.2	80	120			
Copper	0.49	0.0060	0.5000	0	98.2	80	120			
Iron	0.49	0.020	0.5000	0	98.2	80	120			
Lead	0.49	0.0050	0.5000	0	97.3	80	120			
Manganese	0.47	0.0020	0.5000	0	94.1	80	120			
Potassium	54	1.0	50.00	0	108	80	120			
Selenium	0.49	0.050	0.5000	0	97.6	80	120			
Silver	0.10	0.0050	0.1000	0	99.8	80	120			
Sodium	56	1.0	50.00	0	111	80	120			
Uranium	0.48	0.10	0.5000	0	95.7	80	120			
Zinc	0.47	0.020	0.5000	0	94.6	80	120			

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1508875

15-Sep-15

Client: Western Refining Southwest, Inc.

Project: RCRA Wells 8-18-15

Sample ID	1508875-005FMS		SampType:	MS		TestCode:	EPA Method 6010B: Dissolved Metals			
Client ID:	MW-62		Batch ID:	B28416		RunNo:	28416			
Prep Date:			Analysis Date:	8/24/2015		SeqNo:	858459		Units: mg/L	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	0.57	0.020	0.5000	0	114	75	125			
Barium	0.50	0.020	0.5000	0.01237	98.5	75	125			
Cadmium	0.52	0.0020	0.5000	0	104	75	125			
Chromium	0.49	0.0060	0.5000	0	97.4	75	125			
Copper	0.57	0.0060	0.5000	0	113	75	125			
Iron	0.65	0.020	0.5000	0.1548	98.1	75	125			
Lead	0.50	0.0050	0.5000	0	101	75	125			
Potassium	59	1.0	50.00	9.536	98.6	75	125			
Selenium	0.59	0.050	0.5000	0	117	75	125			
Silver	0.10	0.0050	0.1000	0	101	75	125			
Uranium	0.42	0.10	0.5000	0	83.4	75	125			
Zinc	0.52	0.020	0.5000	0.02827	99.2	75	125			

Sample ID	1508875-005FMSD		SampType:	MSD		TestCode:	EPA Method 6010B: Dissolved Metals			
Client ID:	MW-62		Batch ID:	B28416		RunNo:	28416			
Prep Date:			Analysis Date:	8/24/2015		SeqNo:	858460		Units: mg/L	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	0.58	0.020	0.5000	0	116	75	125	1.48	20	
Barium	0.50	0.020	0.5000	0.01237	97.7	75	125	0.765	20	
Cadmium	0.52	0.0020	0.5000	0	104	75	125	0.213	20	
Chromium	0.48	0.0060	0.5000	0	96.9	75	125	0.472	20	
Copper	0.56	0.0060	0.5000	0	113	75	125	0.805	20	
Iron	0.63	0.020	0.5000	0.1548	95.5	75	125	1.97	20	
Lead	0.50	0.0050	0.5000	0	101	75	125	0.115	20	
Potassium	59	1.0	50.00	9.536	99.1	75	125	0.429	20	
Selenium	0.58	0.050	0.5000	0	116	75	125	1.60	20	
Silver	0.10	0.0050	0.1000	0	101	75	125	0.238	20	
Uranium	0.41	0.10	0.5000	0	82.2	75	125	1.45	20	
Zinc	0.52	0.020	0.5000	0.02827	98.8	75	125	0.432	20	

Sample ID	MB		SampType:	MBLK		TestCode:	EPA Method 6010B: Dissolved Metals			
Client ID:	PBW		Batch ID:	A28442		RunNo:	28442			
Prep Date:			Analysis Date:	8/25/2015		SeqNo:	859347		Units: mg/L	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Iron	ND	0.020								
Magnesium	ND	1.0								

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1508875

15-Sep-15

Client: Western Refining Southwest, Inc.

Project: RCRA Wells 8-18-15

Sample ID	LCS		SampType: LCS		TestCode: EPA Method 6010B: Dissolved Metals					
Client ID:	LCSW		Batch ID: A28442		RunNo: 28442					
Prep Date:			Analysis Date: 8/25/2015		SeqNo: 859348		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Iron	0.48	0.020	0.5000	0	95.8	80	120			
Magnesium	51	1.0	50.00	0	103	80	120			

Sample ID	1508875-005FMS		SampType: MS			TestCode: EPA Method 6010B: Dissolved Metals				
Client ID:	MW-62		Batch ID: A28442			RunNo: 28442				
Prep Date:			Analysis Date: 8/25/2015			SeqNo: 859363		Units: mg/L		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Magnesium	86	1.0	50.00	38.06	95.5	75	125			

Sample ID	1508875-005FMSD		SampType: MSD		TestCode: EPA Method 6010B: Dissolved Metals					
Client ID:	MW-62		Batch ID: A28442		RunNo: 28442					
Prep Date:			Analysis Date: 8/25/2015		SeqNo: 859364		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Magnesium	90	1.0	50.00	38.06	104	75	125	4.89	20	

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1508875

15-Sep-15

Client: Western Refining Southwest, Inc.

Project: RCRA Wells 8-18-15

Sample ID	1508875-003EMS		SampType: MS		TestCode: EPA 6010B: Total Recoverable Metals					
Client ID:	MW-53		Batch ID: 20922		RunNo: 28442					
Prep Date:	8/21/2015		Analysis Date: 8/25/2015		SeqNo: 859393		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	0.57	0.020	0.5000	0	115	75	125			
Barium	0.56	0.020	0.5000	0.05130	101	75	125			
Cadmium	0.51	0.0020	0.5000	0	103	75	125			
Chromium	0.50	0.0060	0.5000	0	99.7	75	125			
Lead	0.52	0.0050	0.5000	0	103	75	125			
Selenium	0.50	0.050	0.5000	0	101	75	125			
Silver	0.11	0.0050	0.1000	0	106	75	125			

Sample ID	1508875-003EMSD		SampType: MSD		TestCode: EPA 6010B: Total Recoverable Metals					
Client ID:	MW-53		Batch ID: 20922		RunNo: 28442					
Prep Date:	8/21/2015		Analysis Date: 8/25/2015		SeqNo: 859394		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	0.59	0.020	0.5000	0	118	75	125	2.57	20	
Barium	0.56	0.020	0.5000	0.05130	101	75	125	0.284	20	
Cadmium	0.52	0.0020	0.5000	0	103	75	125	0.235	20	
Chromium	0.50	0.0060	0.5000	0	99.6	75	125	0.0742	20	
Lead	0.51	0.0050	0.5000	0	103	75	125	0.455	20	
Selenium	0.51	0.050	0.5000	0	101	75	125	0.502	20	
Silver	0.10	0.0050	0.1000	0	105	75	125	0.636	20	

Sample ID	MB-20922		SampType: MBLK		TestCode: EPA 6010B: Total Recoverable Metals					
Client ID:	PBW		Batch ID: 20922		RunNo: 28442					
Prep Date:	8/21/2015		Analysis Date: 8/25/2015		SeqNo: 867263		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	ND	0.020								
Barium	ND	0.020								
Cadmium	ND	0.0020								
Chromium	ND	0.0060								
Lead	ND	0.0050								
Selenium	ND	0.050								
Silver	ND	0.0050								

Sample ID	LCS-20922		SampType: LCS		TestCode: EPA 6010B: Total Recoverable Metals					
Client ID:	LCSW		Batch ID: 20922		RunNo: 28442					
Prep Date:	8/21/2015		Analysis Date: 8/25/2015		SeqNo: 867264		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	0.52	0.020	0.5000	0	104	80	120			

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1508875

15-Sep-15

Client: Western Refining Southwest, Inc.

Project: RCRA Wells 8-18-15

Sample ID	LCS-20922		SampType: LCS		TestCode: EPA 6010B: Total Recoverable Metals					
Client ID:	LCSW		Batch ID: 20922		RunNo: 28442					
Prep Date:	8/21/2015		Analysis Date: 8/25/2015		SeqNo: 867264		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.50	0.020	0.5000	0	100	80	120			
Cadmium	0.50	0.0020	0.5000	0	99.9	80	120			
Chromium	0.49	0.0060	0.5000	0	98.6	80	120			
Lead	0.50	0.0050	0.5000	0	101	80	120			
Selenium	0.50	0.050	0.5000	0	99.1	80	120			
Silver	0.10	0.0050	0.1000	0	102	80	120			

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1508875

15-Sep-15

Client: Western Refining Southwest, Inc.

Project: RCRA Wells 8-18-15

Sample ID rb	SampType: MBLK		TestCode: EPA Method 8015D: Gasoline Range							
Client ID: PBW	Batch ID: C28360		RunNo: 28360							
Prep Date:	Analysis Date: 8/20/2015		SeqNo: 856605		Units: mg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	0.050								
Surr: BFB	10		10.00		103	70	130			

Sample ID 2.5ug gro lcs	SampType: LCS		TestCode: EPA Method 8015D: Gasoline Range							
Client ID: LCSW	Batch ID: C28360		RunNo: 28360							
Prep Date:	Analysis Date: 8/20/2015		SeqNo: 856606		Units: mg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	0.49	0.050	0.5000	0	97.0	80.6	122			
Surr: BFB	9.7		10.00		97.2	70	130			

Sample ID 1508875-001B MS	SampType: MS		TestCode: EPA Method 8015D: Gasoline Range							
Client ID: MW-51	Batch ID: C28360		RunNo: 28360							
Prep Date:	Analysis Date: 8/20/2015		SeqNo: 856608		Units: mg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	0.50	0.050	0.5000	0	100	53.8	128			
Surr: BFB	10		10.00		100	70	130			

Sample ID 1508875-001B MSD	SampType: MSD		TestCode: EPA Method 8015D: Gasoline Range							
Client ID: MW-51	Batch ID: C28360		RunNo: 28360							
Prep Date:	Analysis Date: 8/20/2015		SeqNo: 856609		Units: mg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	0.51	0.050	0.5000	0	103	53.8	128	2.76	20	
Surr: BFB	10		10.00		104	70	130	0	0	

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1508875

15-Sep-15

Client: Western Refining Southwest, Inc.

Project: RCRA Wells 8-18-15

Sample ID	mb-1	SampType:	mblk	TestCode:	SM2320B: Alkalinity					
Client ID:	PBW	Batch ID:	R28401	RunNo:	28401					
Prep Date:		Analysis Date:	8/21/2015	SeqNo:	858004	Units:	mg/L CaCO3			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Alkalinity (as CaCO3)	ND	20.00								

Sample ID	lcs-1	SampType:	lcs	TestCode:	SM2320B: Alkalinity					
Client ID:	LCSW	Batch ID:	R28401	RunNo:	28401					
Prep Date:		Analysis Date:	8/21/2015	SeqNo:	858005	Units:	mg/L CaCO3			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Alkalinity (as CaCO3)	80.16	20.00	80.00	0	100	90	110			

Sample ID	mb-2	SampType:	mblk	TestCode:	SM2320B: Alkalinity					
Client ID:	PBW	Batch ID:	R28401	RunNo:	28401					
Prep Date:		Analysis Date:	8/21/2015	SeqNo:	858028	Units:	mg/L CaCO3			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Alkalinity (as CaCO3)	ND	20.00								

Sample ID	lcs-2	SampType:	lcs	TestCode:	SM2320B: Alkalinity					
Client ID:	LCSW	Batch ID:	R28401	RunNo:	28401					
Prep Date:		Analysis Date:	8/21/2015	SeqNo:	858029	Units:	mg/L CaCO3			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Alkalinity (as CaCO3)	80.44	20.00	80.00	0	101	90	110			

Sample ID	mb-1	SampType:	MBLK	TestCode:	SM2320B: Alkalinity					
Client ID:	PBW	Batch ID:	R28459	RunNo:	28459					
Prep Date:		Analysis Date:	8/25/2015	SeqNo:	860156	Units:	mg/L CaCO3			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Alkalinity (as CaCO3)	ND	20.00								

Sample ID	lcs-1	SampType:	LCS	TestCode:	SM2320B: Alkalinity					
Client ID:	LCSW	Batch ID:	R28459	RunNo:	28459					
Prep Date:		Analysis Date:	8/25/2015	SeqNo:	860157	Units:	mg/L CaCO3			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Alkalinity (as CaCO3)	79.36	20.00	80.00	0	99.2	90	110			

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1508875

15-Sep-15

Client: Western Refining Southwest, Inc.

Project: RCRA Wells 8-18-15

Sample ID	MB-20886		SampType: MBLK		TestCode: SM2540C MOD: Total Dissolved Solids					
Client ID:	PBW		Batch ID: 20886		RunNo: 28352					
Prep Date:	8/19/2015		Analysis Date: 8/20/2015		SeqNo: 856124		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Dissolved Solids	ND	20.0								

Sample ID	LCS-20886		SampType:	LCS		TestCode:	SM2540C MOD: Total Dissolved Solids				
Client ID:	LCSW		Batch ID:	20886		RunNo:	28352				
Prep Date:	8/19/2015		Analysis Date:	8/20/2015		SeqNo:	856125		Units: mg/L		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Total Dissolved Solids	1030	20.0	1000	0	103	80	120				

Sample ID	1508875-005DMS		SampType: MS		TestCode: SM2540C MOD: Total Dissolved Solids					
Client ID:	MW-62		Batch ID: 20886		RunNo: 28352					
Prep Date:	8/19/2015		Analysis Date: 8/20/2015		SeqNo: 856135		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Dissolved Solids	8130	40.0	2000	6042	104	80	120			D

Sample ID	1508875-005DMSD		SampType: MSD		TestCode: SM2540C MOD: Total Dissolved Solids					
Client ID:	MW-62		Batch ID: 20886		RunNo: 28352					
Prep Date:	8/19/2015		Analysis Date: 8/20/2015		SeqNo: 856136		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Dissolved Solids	8010	40.0	2000	6042	98.5	80	120	1.44	5	D

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit

Sample Log-In Check List

Client Name: Western Refining Southw

Work Order Number: 1508875

RcptNo: 1

Received by/date:	<i>AG</i>	<i>08/19/15</i>
Logged By:	Ashley Gallegos	8/19/2015 7:45:00 AM <i>AG</i>
Completed By:	Ashley Gallegos	8/19/2015 8:49:29 AM <i>AG</i>
Reviewed By:	<i>CS</i>	<i>08/19/15</i>

Chain of Custody

- Custody seals intact on sample bottles? Yes ☐ No ☐ Not Present ☒
- Is Chain of Custody complete? Yes ☒ No ☐ Not Present ☐
- How was the sample delivered? Courier

Log In

- Was an attempt made to cool the samples? Yes ☒ No ☐ NA ☐
- Were all samples received at a temperature of >0° C to 6.0°C Yes ☒ No ☐ NA ☐
- Sample(s) in proper container(s)? Yes ☒ No ☐
- Sufficient sample volume for indicated test(s)? Yes ☒ No ☐
- Are samples (except VOA and ONG) properly preserved? Yes ☒ No ☒ NA ☐ *CS 08/19/15*
- Was preservative added to bottles? Yes ☒ No ☒ NA ☐
- VOA vials have zero headspace? Yes ☒ No ☐ No VOA Vials ☐
- Were any sample containers received broken? Yes ☐ No ☒
- Does paperwork match bottle labels? Yes ☒ No ☐
- Are matrices correctly identified on Chain of Custody? Yes ☒ No ☐
- Is it clear what analyses were requested? Yes ☒ No ☐
- Were all holding times able to be met? Yes ☒ No ☐

of preserved bottles checked for pH: *36*
(*<2* or >12 unless noted)
Adjusted? *yes*
Checked by: *CS*

Special Handling (if applicable)

- Was client notified of all discrepancies with this order? Yes ☐ No ☐ NA ☒

Person Notified:		Date:	
By Whom:		Via:	☐ eMail ☐ Phone ☐ Fax ☐ In Person
Regarding:			
Client Instructions:			

- Additional remarks: *For metals analysis, added 1ml HNO₃ to ~~-010E~~ for acceptable pH. Held in Log in for 24 hours prior to analysis. CS 08/19/15*
- Cooler Information

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	1.0	Good	Yes			

Chain-of-Custody Record

Client: Western Refining

Mailing Address: #50 CR 4990

Bloomfield, NM 87413

Phone #: 505-632-4135

email or Fax#:

QA/QC Package:

☒ Standard ☒ Level 4 (Full Validation)

Accreditation

☐ NELAP ☐ Other

☐ EDD (Type)

Date Time Matrix Sample Request ID

8-18-15 7:50 H₂O MW-51

1-500ml Amber

1-500ml HNO₃

1-125ml HNO₃

1-500ml

1-125ml H₂SO₄

5-VOA HCl -002

1-500ml Amber

1-500ml HNO₃

1-125ml HNO₃

1-500ml

1-125ml H₂SO₄

Date: 8-18-15

Time: 1245

Relinquished by: Robert Kraker

Date: 8-18-15

Time: 1930

Relinquished by: North Waelen

Date: 8-18-15

Time: 0745

Turn-Around Time:

☒ Standard ☐ Rush

Project Name:

RCRA wells 8-18-15

Project #:

PO # 12610955

Project Manager:

Sampler: Bob + Tracy

On Ice: ☒ Yes ☐ No

Sample Temperature: 1.0

Container Type and #

Preservative Type

HEAL No

1508875

-001

BTEX + MTBE + TMB's (8021)

BTEX + MTBE + TPH (Gas only)

TPH 8015B (GRO /)

TPH (Method 418.1)

EDB (Method 504.1)

PAH's (8310 or 8270 SIMS)

RCRA 8 Metals Total

Anions (F, Cl, NO₃, NO₂, PO₄, SO₄)

8081 Pesticides / 8082 PCB's

8260B (VOA)

8270 (Semi-VOA)

TKO-EXT. 8015B

Dissolved Metals

Gerideum ALK

Anions, DO₂



HALL ENVIRONMENTAL ANALYSIS LABORATORY

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

Tel. 505-345-3975 Fax 505-345-4107

Analysis Request

HALL ENVIRONMENTAL ANALYSIS LABORATORY

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

Tel. 505-345-3975 Fax 505-345-4107

Analysis Request

[illegible]

Remarks:

Chain-of-Custody Record					
Client: Western Refining					
Mailing Address: #30 CR 4990 Bloomfield, NM 87413 Phone #: 505-632-7135 email or Fax#:					
QA/QC Package: ☐ Standard ☒ Level 4 (Full Validation)					
Accreditation ☐ NELAP ☐ Other _____					
☐ EDD (Type) _____					
Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type
8-18-15	10:00	H ₂ O	MW-64	5-VOA	HCl
			/	1-500 ml	Amber
			/	1-500 ml	HNO ₃
			/	Filtered - 125 ml	HNO ₃
			/	1-500 ml	/
			/	1-125 ml	H ₂ SO ₄
8-18-15	10:00		NW-64D	5-VOA	HCl
			/	1-500 ml	Amber
			/	1-500 ml	HNO ₃
			/	Filtered - 125 ml	HNO ₃
			/	1-500 ml	/
			/	1-125 ml	H ₂ SO ₄
Date:	Time:	Relinquished by:	Received by:	Date	Time
8-18-15	1245	Robert Graham	Christie White	8/18/15	1245
Date:	Time:	Relinquished by:	Received by:	Date	Time
8/18/15	1930	Christie White	AP Mallinos	8/19/15	0700

HALL ENVIRONMENTAL ANALYSIS LABORATORY

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

Tel. 505-345-3975 Fax 505-345-4107

Analysis Request

[illegible]

Remarks:

Date:	Time:	Relinquished by:	Received by:	Date	Time
11-18-15	1245	Robert Krakow	Marta Walek	9/18/15	1245
Date:	Time:	Relinquished by:	Received by:	Date	Time

18/16	1930	Monte White	AmBallees 08/19/15 0745-

Chain-of-Custody Record

Client: Western Refining

Mailing Address: #50 CR 4990

Bloomfield, NM 87413

Phone #: 505-632-4135

email or Fax#:

QA/QC Package:

☐ Standard ☒ Level 4 (Full Validation)

Accreditation

☐ NELAP ☐ Other

☐ EDD (Type)

Turn-Around Time:

☒ Standard ☐ Rush

Project Name:

RCRA wells 8-18-15

Project #:

PO # 12610955

Project Manager:

Sampler: Bob & Tracy

On Ice: ☒ Yes ☐ No

Sample Temperature: 10

Date Time Matrix Sample Request ID

1-18-15 9:50 H2O MW-59

1-18-15 9:50 H2O MW-59

1-18-15 9:50 H2O MW-59

1-18-15 9:50 H2O MW-59

1-18-15 9:50 H2O MW-59

1-18-15 9:50 H2O MW-59

1-18-15 9:50 H2O MW-59

1-18-15 9:50 H2O MW-59

1-18-15 9:50 H2O MW-59

1-18-15 9:50 H2O MW-59

1-18-15 9:50 H2O MW-59

1-18-15 9:50 H2O MW-59

1-18-15 9:50 H2O MW-59

1-18-15 9:50 H2O MW-59

1-18-15 9:50 H2O MW-59

1-18-15 9:50 H2O MW-59

1-18-15 9:50 H2O MW-59

1-18-15 9:50 H2O MW-59

1-18-15 9:50 H2O MW-59

1-18-15 9:50 H2O MW-59

1-18-15 9:50 H2O MW-59

1-18-15 9:50 H2O MW-59

1-18-15 9:50 H2O MW-59

1-18-15 9:50 H2O MW-59

1-18-15 9:50 H2O MW-59

Date: Time: Relinquished by:

1-18-15 12:45 Y Robert Freeman

Date: Time: Relinquished by:

8/18/15 19:30 Chant White

Date: Time: Relinquished by:

8/18/15 19:30 Chant White

Date: Time: Relinquished by:

8/18/15 19:30 Chant White

Received by:

Chant White

Date: Time

8/18/15 12:45

Received by:

Chant White

Date: Time

8/18/15 19:30

Date: Time

8/18/15 12:45

Date: Time

8/18/15 12:45

Date: Time

8/18/15 12:45

Date: Time

8/18/15 12:45

Remarks:

EQUIP. BLANK

BTX only

Analysis Request

BTX + MTBE + TMBs (8021)

BTX + MTBE + TPH (Gas only)

TPH 8015B (GRO /)

TPH (Method 418.1)

EDB (Method 504.1)

PAH's (8310 or 8270 SIMS)

RCRA 8 Metals

Anions (F, Cl, NO₃, NO₂, PO₄, SO₄)

8081 Pesticides / 8082 PCB's

8260B (VOA)

8270 (Semi-VOA)

Pro-Ext. 8015B

Dissolved Metals

Gen. Chem. ALK

Air Bubbles (Y or N)



**HALL ENVIRONMENTAL
ANALYSIS LABORATORY**

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

Tel. 505-345-3975 Fax 505-345-4107

Chain-of-Custody Record

Client: Western Refining

Mailing Address: #50 CR 4990

Bloomfield, NM 87413

Phone #: 505-632-4135

email or Fax#:

QA/QC Package: ☒ Level 4 (Full Validation)

Accreditation ☐ NELAP ☐ Other

☐ EDD (Type)

Date

Time

Matrix

Sample Request ID

18-15 8:30

H2O

MW-67

filter

1-125ml

1-125ml

1-125ml

1-125ml

1-125ml

1-125ml

1-125ml

1-125ml

1-125ml

1-125ml

1-125ml

1-125ml

Turn-Around Time:

☒ Standard ☐ Rush

Project Name:

RCRA wells 8-18-15

Project #:

PO # 12610955

Project Manager:

Bob & Tracy

On Ice: ☒ Yes ☐ No

Sample Temperature:

10

Container Type and #

5-VOA

HCl

1-500ml

Amber

1-500ml

HNO3

1-125ml

HNO3

1-500ml

H2SO4

1-125ml

HCl

5-VOA

Amber

1-500ml

HNO3

1-125ml

HNO3

1-500ml

1-125ml

1-125ml

1-125ml

1-125ml

1-125ml

1-125ml

1-125ml

1-125ml

1-125ml

1-125ml

1-125ml

1-125ml

1-125ml

1-125ml

1-125ml

1-125ml

1-125ml

1-125ml

1-125ml

1-125ml

1-125ml

1-125ml

1-125ml

1-125ml

1-125ml

1-125ml

1-125ml

1-125ml

1-125ml

1-125ml

1-125ml

1-125ml

1-125ml

1-125ml

1-125ml

1-125ml

1-125ml

1-125ml

1-125ml

1-125ml

1-125ml

1-125ml

1-125ml

1-125ml

1-125ml

1-125ml

1-125ml

1-125ml

1-125ml

1-125ml

1-125ml

1-125ml

1-125ml

1-125ml

1-125ml

1-125ml

1-125ml

1-125ml

1-125ml

1-125ml

1-125ml

1-125ml

1-125ml

1-125ml

1-125ml

1-125ml

1-125ml

1-125ml

1-125ml

1-125ml

1-125ml

1-125ml

1-125ml

1-125ml

1-125ml

1-125ml

1-125ml

1-125ml

1-125ml

1-125ml

1-125ml

1-125ml

1-125ml

1-125ml

1-125ml

1-125ml

1-125ml

1-125ml

1-125ml

1-125ml

1-125ml

1-125ml

1-125ml

1-125ml

1-125ml

1-125ml

1-125ml

1-125ml

1-125ml

1-125ml

1-125ml

1-125ml

1-125ml

1-125ml

1-125ml

1-125ml

1-125ml

1-125ml

1-125ml

1-125ml

1-125ml

1-125ml

1-125ml

1-125ml

1-125ml

1-125ml

1-125ml

1-125ml

1-125ml

1-125ml

1-125ml

1-125ml

1-125ml

1-125ml

1-125ml

1-125ml

1-125ml

1-125ml

1-125ml

1-125ml

1-125ml

1-125ml

1-125ml

1-125ml

1-125ml

1-125ml

1-125ml

1-125ml

1-125ml

1-125ml

1-125ml

1-125ml

1-125ml

1-125ml

1-125ml

1-125ml

1-125ml

1-125ml

1-125ml

1-125ml

1-125ml

1-125ml

1-125ml

1-125ml

1-125ml

1-125ml

1-125ml

1-125ml

1-125ml

1-125ml

1-125ml

1-125ml

1-125ml

1-125ml

1-125ml

1-125ml

1-125ml

1-125ml

1-125ml

1-125ml

1-125ml

1-125ml

1-125ml

1-125ml

1-125ml

1-125ml

1-125ml

1-125ml

1-125ml

1-125ml

1-125ml

1-125ml

1-125ml

1-125ml

1-125ml

1-125ml

1-125ml

1-125ml

1-125ml

1-125ml

1-125ml

1-125ml

1-125ml

1-125ml

1-125ml

1-125ml

1-125ml

</

TABLE 3
Facility-Wide Monitoring Plan Summary

Well ID	Sampling Event	VOCs (EPA Method 8260)	VOCs - Target List ^{(1) (2)} (EPA Method 8260)	SVOCs (EPA Method 8270)	TPH - Diesel Range Organics (EPA Method 8015B)	TPH - Gasoline Range Organics (EPA Method 8015B)	Total Recoverable Metals - Target List (EPA Method 6010/7470)	Total Dissolved Metals - Target List (EPA Method 6010/7470)	General Chemistry - Alkalinity (EPA Method 310.1)	General Chemistry - Anions (EPA Method 300.0)	Carbon Dioxide (EPA Method 310.1)	Total Dissolved Solids (TDS) (EPA Method 160.1 or Field Measurement)	Specific Conductance (EPA Method 120.1 or Field Measurement)	Temperature, pH, ORP (Field Measurement)	Dissolved Oxygen (Field Measurement)
✓ MW-68 •	Semi-Annual Event (April) Annual Event (August)	X			X*	X	X	Not Sampled	X	X	X	X	X	X	X
MW-69	Semi-Annual Event (April) Annual Event (August)	X		X	X	X	X	Not Sampled	X	X	X	X	X	X	X
✓ MW-70 s2 •	Semi-Annual Event (April) Annual Event (August)	X			X	X	X	Not Sampled	X	X	X	X	X	X	X
MW-71 s3	Semi-Annual Event (April) Annual Event (August)	X		X	X	X	X	Not Sampled	X	X	X	X	X	X	X
MW-72 s3	Semi-Annual Event (April) Annual Event (August)	X		X	X	X	X	Not Sampled	X	X	X	X	X	X	X
MW-73 s3	Semi-Annual Event (April) Annual Event (August)	X		X	X	X	X	Not Sampled	X	X	X	X	X	X	X
MW-74 s3	Semi-Annual Event (April) Annual Event (August)	X		X	X	X	X	Not Sampled	X	X	X	X	X	X	X
MW-75 s3	Semi-Annual Event (April) Annual Event (August)	X		X	X	X	X	Not Sampled	X	X	X	X	X	X	X
MW-76 s3	Semi-Annual Event (April) Annual Event (August)	X		X	X	X	X	Not Sampled	X	X	X	X	X	X	X
MW-77 s3	Semi-Annual Event (April) Annual Event (August)	X		X	X	X	X	Not Sampled	X	X	X	X	X	X	X
NORTH BOUNDARY BARRIER															
Collection Wells															
CW 0+60	Semi-Annual Event (April) Annual Event (August)		X		X							X	X	X	X
CW 26+95	Semi-Annual Event (April) Annual Event (August)		X		X							X	X	X	X
Observation Wells															
OW 0+60	Semi-Annual Event (April) Annual Event (August)		X		X	X						X	X	X	X
OW 1+50	Semi-Annual Event (April) Annual Event (August)		X		X	X						X	X	X	X
OW 3+85	Semi-Annual Event (April) Annual Event (August)		X		X	X						X	X	X	X

TABLE 3
Facility-Wide Monitoring Plan Summary

Well ID	Sampling Event	VOCs (EPA Method 8260)	VOCs - Target List (EPA Method 8260) (1) (2)	SVOCs (EPA Method 8270)	TPH - Diesel Range Organics (EPA Method 8015B) Extended	TPH - Gasoline Range Organics (EPA Method 8015B)	Total Recoverable Metals - Target List (EPA Method 6010/7470)	Total Dissolved Metals - Target List (EPA Method 6010/7470)	General Chemistry - Alkalinity (EPA Method 310.1)	General Chemistry - Anions (EPA Method 300.0)	Carbon Dioxide (EPA Method 310.1)	Total Dissolved Solids (TDS) (EPA Method 160.1 or Field Measurement)	Specific Conductance (EPA Method 120.1 or Field Measurement)	Temperature, pH, ORP (Field Measurement)	Dissolved Oxygen (Field Measurement)
RCRA Investigation Wells															
✓ MW-52	Semi-Annual Event (April) Annual Event (August)	X			X*	X	X	X	X	X	X	X	X	X	X
✓ MW-53	Semi-Annual Event (April) Annual Event (August)	X			X*	X	X	X	X	X	X	X	X	X	X
MW-54	Semi-Annual Event (April) Annual Event (August)	X		X	X	X	X	X	X	X	X	X	X	X	X
MW-55	Semi-Annual Event (April) Annual Event (August)	X		X	X	X	X	X	X	X	X	X	X	X	X
MW-56	Semi-Annual Event (April) Annual Event (August)	X		X	X	X	X	X	X	X	X	X	X	X	X
MW-57	Semi-Annual Event (April) Annual Event (August)	X		X	X	X	X	X	X	X	X	X	X	X	X
MW-58	Semi-Annual Event (April) Annual Event (August)	X		X	X	X	X	X	X	X	X	X	X	X	X
✓ MW-59	Semi-Annual Event (April) Annual Event (August)	X		X	X	X	X	X	X	X	X	X	X	X	X
✓ MW-60	Semi-Annual Event (April) Annual Event (August)	X		X	X	X	X	X	X	X	X	X	X	X	X
MW-61	Semi-Annual Event (April) Annual Event (August)	X		X	X*	X	X	X	X	X	X	X	X	X	X
✓ MW-62	Semi-Annual Event (April) Annual Event (August)	X		X	X	X	X	X	X	X	X	X	X	X	X
✓ MW-63	Semi-Annual Event (April) Annual Event (August)	X		X	X*	X	X	X	X	X	X	X	X	X	X
✓ MW-64	Semi-Annual Event (April) Annual Event (August)	X		X	X	X	X	X	X	X	X	X	X	X	X
✓ MW-65	Semi-Annual Event (April) Annual Event (August)	X		X	X	X	X	X	X	X	X	X	X	X	X
MW-66	Semi-Annual Event (April) Annual Event (August)	X		X	X	X	X	X	X	X	X	X	X	X	X
✓ MW-67	Semi-Annual Event (April) Annual Event (August)	X		X	X*	X	X	X	X	X	X	X	X	X	X

yes = * applies

TABLE 2
Analytical Methods and Target Analytes

VOCs (EPA Method 8260B) ⁽¹⁾
- Target List
<i>Benzene</i>
<i>Toluene</i>
<i>Ethylbenzene</i>
<i>Xylenes</i>
<i>Methyl tert butyl ether (MTBE)</i>
SVOCs - (EPA Method 8270)
- Method List
TPH-GRO (EPA Method 8015B)
- Gasoline Range Organics
TPH-DRO (EPA Method 8015B)
- Diesel Range Organics
- Motor Oil Range Organics
Total Carbon Dioxide (Laboratory Calculated)
- Dissolved CO ₂
Specific Conductivity (EPA Method 120.1 or field measurement)
- Specific conductance
TDS (EPA Method 160.1 or field measurement)
- Total dissolved solids
General Chemistry - Anions (EPA Method 300.0)
<i>Fluoride</i>
<i>Chloride</i>
<i>Bromide</i>
<i>Nitrogen, Nitrite (as N)</i>
<i>Nitrogen, Nitrate (as N)</i>
<i>Phosphorous, Orthophosphate (As P)</i>
<i>Sulfate</i>
General Chemistry - Alkalinity (EPA Method 310.1)
<i>Alkalinity, Total</i>
<i>Carbonate</i>
<i>Bicarbonate</i>

Total Recoverable Metals (EPA Method 6010B/7470)
- Target List (not applicable to River Terrace Sampling Events)
<i>Arsenic</i>
<i>Barium</i>
<i>Cadmium</i>
<i>Chromium</i>
<i>Lead</i>
<i>Mercury (DW-1 ONLY)</i>
<i>Selenium</i>
<i>Silver</i>
- Target List (for River Terrace Sampling Events Only)
<i>Lead</i>
<i>Mercury (DW-1 ONLY)</i>
Dissolved Metals (EPA Method 6010B / 7470)
- Target List (for Refinery Complex, Outfalls, and River)
<i>Arsenic</i>
<i>Barium</i>
<i>Cadmium</i>
<i>Calcium</i>
<i>Chromium</i>
<i>Copper</i>
<i>Iron</i>
<i>Lead</i>
<i>Magnesium</i>
<i>Manganese</i>
<i>Mercury</i>
<i>Potassium</i>
<i>Selenium</i>
<i>Silver</i>
<i>Sodium</i>
<i>Uranium</i>
<i>Zinc</i>

TPH = total petroleum hydrocarbons
GRO = gasoline range organics
VOCs = volatile organic compounds
DRO = diesel range organics
TDS = total dissolved solids

NOTES:

- (1) VOCs Target List for River Terrace samples are analyzed by EPA Method 8021B per NMED's letter Approval with Direction dated June 16, 2009.
- (2) Target List for San Juan River Terrace Monitoring Wells and Piezometer Wells only, per the River Terrace Bioventing System Monitoring Plan.



Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

September 15, 2015

Kelly Robinson

Western Refining Southwest, Inc.
#50 CR 4990

Bloomfield, NM 87413

TEL: (505) 632-4166

FAX (505) 632-3911

RE: Cross Gradient Wells 8-19-15

OrderNo.: 1508976

Dear Kelly Robinson:

Hall Environmental Analysis Laboratory received 4 sample(s) on 8/20/2015 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to www.hallenvironmental.com or the state specific web sites. In order to properly interpret your results it is imperative that you review this report in its entirety. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. When necessary, data qualifiers are provided on both the sample analysis report and the QC summary report, both sections should be reviewed. All samples are reported, as received, unless otherwise indicated. Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH and residual chlorine are qualified as being analyzed outside of the recommended holding time.

Please don't hesitate to contact HEAL for any additional information or clarifications.

ADHS Cert #AZ0682 -- NMED-DWB Cert #NM9425 -- NMED-Micro Cert #NM0190

Sincerely,

A handwritten signature in black ink, appearing to read "Andy Freeman", with a stylized flourish at the end.

Andy Freeman

Laboratory Manager

4901 Hawkins NE

Albuquerque, NM 87109

Analytical Report

Lab Order: 1508976

Date Reported: 9/15/2015

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Southwest, Inc.
Project: Cross Gradient Wells 8-19-15
Lab ID: 1508976-001A

Client Sample ID: MW-1
Collection Date: 8/19/2015 7:20:00 AM
Matrix: Aqueous

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES				Analyst: DJF			
Benzene	ND	1.0		µg/L	1	8/21/2015 12:35:59 PM	R28392
Toluene	ND	1.0		µg/L	1	8/21/2015 12:35:59 PM	R28392
Ethylbenzene	ND	1.0		µg/L	1	8/21/2015 12:35:59 PM	R28392
Methyl tert-butyl ether (MTBE)	ND	1.0		µg/L	1	8/21/2015 12:35:59 PM	R28392
1,2,4-Trimethylbenzene	ND	1.0		µg/L	1	8/21/2015 12:35:59 PM	R28392
1,3,5-Trimethylbenzene	ND	1.0		µg/L	1	8/21/2015 12:35:59 PM	R28392
1,2-Dichloroethane (EDC)	ND	1.0		µg/L	1	8/21/2015 12:35:59 PM	R28392
1,2-Dibromoethane (EDB)	ND	1.0		µg/L	1	8/21/2015 12:35:59 PM	R28392
Naphthalene	ND	2.0		µg/L	1	8/21/2015 12:35:59 PM	R28392
1-Methylnaphthalene	ND	4.0		µg/L	1	8/21/2015 12:35:59 PM	R28392
2-Methylnaphthalene	ND	4.0		µg/L	1	8/21/2015 12:35:59 PM	R28392
Acetone	ND	10		µg/L	1	8/21/2015 12:35:59 PM	R28392
Bromobenzene	ND	1.0		µg/L	1	8/21/2015 12:35:59 PM	R28392
Bromodichloromethane	ND	1.0		µg/L	1	8/21/2015 12:35:59 PM	R28392
Bromoform	ND	1.0		µg/L	1	8/21/2015 12:35:59 PM	R28392
Bromomethane	ND	3.0		µg/L	1	8/21/2015 12:35:59 PM	R28392
2-Butanone	ND	10		µg/L	1	8/21/2015 12:35:59 PM	R28392
Carbon disulfide	ND	10		µg/L	1	8/21/2015 12:35:59 PM	R28392
Carbon Tetrachloride	ND	1.0		µg/L	1	8/21/2015 12:35:59 PM	R28392
Chlorobenzene	ND	1.0		µg/L	1	8/21/2015 12:35:59 PM	R28392
Chloroethane	ND	2.0		µg/L	1	8/21/2015 12:35:59 PM	R28392
Chloroform	ND	1.0		µg/L	1	8/21/2015 12:35:59 PM	R28392
Chloromethane	ND	3.0		µg/L	1	8/21/2015 12:35:59 PM	R28392
2-Chlorotoluene	ND	1.0		µg/L	1	8/21/2015 12:35:59 PM	R28392
4-Chlorotoluene	ND	1.0		µg/L	1	8/21/2015 12:35:59 PM	R28392
cis-1,2-DCE	ND	1.0		µg/L	1	8/21/2015 12:35:59 PM	R28392
cis-1,3-Dichloropropene	ND	1.0		µg/L	1	8/21/2015 12:35:59 PM	R28392
1,2-Dibromo-3-chloropropane	ND	2.0		µg/L	1	8/21/2015 12:35:59 PM	R28392
Dibromochloromethane	ND	1.0		µg/L	1	8/21/2015 12:35:59 PM	R28392
Dibromomethane	ND	1.0		µg/L	1	8/21/2015 12:35:59 PM	R28392
1,2-Dichlorobenzene	ND	1.0		µg/L	1	8/21/2015 12:35:59 PM	R28392
1,3-Dichlorobenzene	ND	1.0		µg/L	1	8/21/2015 12:35:59 PM	R28392
1,4-Dichlorobenzene	ND	1.0		µg/L	1	8/21/2015 12:35:59 PM	R28392
Dichlorodifluoromethane	ND	1.0		µg/L	1	8/21/2015 12:35:59 PM	R28392
1,1-Dichloroethane	ND	1.0		µg/L	1	8/21/2015 12:35:59 PM	R28392
1,1-Dichloroethene	ND	1.0		µg/L	1	8/21/2015 12:35:59 PM	R28392
1,2-Dichloropropane	ND	1.0		µg/L	1	8/21/2015 12:35:59 PM	R28392
1,3-Dichloropropane	ND	1.0		µg/L	1	8/21/2015 12:35:59 PM	R28392
2,2-Dichloropropane	ND	2.0		µg/L	1	8/21/2015 12:35:59 PM	R28392
1,1-Dichloropropene	ND	1.0		µg/L	1	8/21/2015 12:35:59 PM	R28392
Hexachlorobutadiene	ND	1.0		µg/L	1	8/21/2015 12:35:59 PM	R28392

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Analytical Report

Lab Order: 1508976

Date Reported: 9/15/2015

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Southwest, Inc.
Project: Cross Gradient Wells 8-19-15
Lab ID: 1508976-001A

Client Sample ID: MW-1
Collection Date: 8/19/2015 7:20:00 AM
Matrix: Aqueous

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES				Analyst: DJF			
2-Hexanone	ND	10		µg/L	1	8/21/2015 12:35:59 PM	R28392
Isopropylbenzene	ND	1.0		µg/L	1	8/21/2015 12:35:59 PM	R28392
4-Isopropyltoluene	ND	1.0		µg/L	1	8/21/2015 12:35:59 PM	R28392
4-Methyl-2-pentanone	ND	10		µg/L	1	8/21/2015 12:35:59 PM	R28392
Methylene Chloride	ND	3.0		µg/L	1	8/21/2015 12:35:59 PM	R28392
n-Butylbenzene	ND	3.0		µg/L	1	8/21/2015 12:35:59 PM	R28392
n-Propylbenzene	ND	1.0		µg/L	1	8/21/2015 12:35:59 PM	R28392
sec-Butylbenzene	ND	1.0		µg/L	1	8/21/2015 12:35:59 PM	R28392
Styrene	ND	1.0		µg/L	1	8/21/2015 12:35:59 PM	R28392
tert-Butylbenzene	ND	1.0		µg/L	1	8/21/2015 12:35:59 PM	R28392
1,1,1,2-Tetrachloroethane	ND	1.0		µg/L	1	8/21/2015 12:35:59 PM	R28392
1,1,2,2-Tetrachloroethane	ND	2.0		µg/L	1	8/21/2015 12:35:59 PM	R28392
Tetrachloroethene (PCE)	ND	1.0		µg/L	1	8/21/2015 12:35:59 PM	R28392
trans-1,2-DCE	ND	1.0		µg/L	1	8/21/2015 12:35:59 PM	R28392
trans-1,3-Dichloropropene	ND	1.0		µg/L	1	8/21/2015 12:35:59 PM	R28392
1,2,3-Trichlorobenzene	ND	1.0		µg/L	1	8/21/2015 12:35:59 PM	R28392
1,2,4-Trichlorobenzene	ND	1.0		µg/L	1	8/21/2015 12:35:59 PM	R28392
1,1,1-Trichloroethane	ND	1.0		µg/L	1	8/21/2015 12:35:59 PM	R28392
1,1,2-Trichloroethane	ND	1.0		µg/L	1	8/21/2015 12:35:59 PM	R28392
Trichloroethene (TCE)	ND	1.0		µg/L	1	8/21/2015 12:35:59 PM	R28392
Trichlorofluoromethane	ND	1.0		µg/L	1	8/21/2015 12:35:59 PM	R28392
1,2,3-Trichloropropane	ND	2.0		µg/L	1	8/21/2015 12:35:59 PM	R28392
Vinyl chloride	ND	1.0		µg/L	1	8/21/2015 12:35:59 PM	R28392
Xylenes, Total	ND	1.5		µg/L	1	8/21/2015 12:35:59 PM	R28392
Surr: 1,2-Dichloroethane-d4	97.1	70-130		%REC	1	8/21/2015 12:35:59 PM	R28392
Surr: 4-Bromofluorobenzene	108	70-130		%REC	1	8/21/2015 12:35:59 PM	R28392
Surr: Dibromofluoromethane	110	70-130		%REC	1	8/21/2015 12:35:59 PM	R28392
Surr: Toluene-d8	95.6	70-130		%REC	1	8/21/2015 12:35:59 PM	R28392

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
				Page 2 of 40

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order: 1508976

Date Reported: 9/15/2015

CLIENT: Western Refining Southwest, Inc.
Project: Cross Gradient Wells 8-19-15
Lab ID: 1508976-001B

Client Sample ID: MW-1
Collection Date: 8/19/2015 7:20:00 AM
Matrix: Aqueous

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D: GASOLINE RANGE							Analyst: DJF
Gasoline Range Organics (GRO)	ND	0.050		mg/L	1	8/21/2015 12:35:59 PM	C28392
Surr: BFB	95.8	70-130		%REC	1	8/21/2015 12:35:59 PM	C28392

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
				Page 3 of 40

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order: 1508976

Date Reported: 9/15/2015

CLIENT: Western Refining Southwest, Inc.
Project: Cross Gradient Wells 8-19-15
Lab ID: 1508976-001C

Client Sample ID: MW-1
Collection Date: 8/19/2015 7:20:00 AM
Matrix: Aqueous

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
CARBON DIOXIDE							Analyst: JRR
Total Carbon Dioxide	230	1.0	H	mg CO2/L	1	8/27/2015 12:14:36 PM	R28535
EPA METHOD 300.0: ANIONS							Analyst: LGT
Fluoride	0.51	0.10		mg/L	1	8/20/2015 5:57:12 PM	R28365
Chloride	11	0.50		mg/L	1	8/20/2015 5:57:12 PM	R28365
Nitrogen, Nitrite (As N)	ND	0.10		mg/L	1	8/20/2015 5:57:12 PM	R28365
Bromide	ND	0.10		mg/L	1	8/20/2015 5:57:12 PM	R28365
Nitrogen, Nitrate (As N)	0.54	0.10		mg/L	1	8/20/2015 5:57:12 PM	R28365
Phosphorus, Orthophosphate (As P)	ND	0.50		mg/L	1	8/20/2015 5:57:12 PM	R28365
Sulfate	110	10		mg/L	20	8/20/2015 6:09:37 PM	R28365
SM2510B: SPECIFIC CONDUCTANCE							Analyst: JRR
Conductivity	710	0.010		µmhos/cm	1	8/27/2015 12:14:36 PM	R28535
SM2320B: ALKALINITY							Analyst: JRR
Bicarbonate (As CaCO3)	246.5	20.00		mg/L CaCO3	1	8/27/2015 12:14:36 PM	R28535
Carbonate (As CaCO3)	ND	2.000		mg/L CaCO3	1	8/27/2015 12:14:36 PM	R28535
Total Alkalinity (as CaCO3)	246.5	20.00		mg/L CaCO3	1	8/27/2015 12:14:36 PM	R28535
SM2540C MOD: TOTAL DISSOLVED SOLIDS							Analyst: KS
Total Dissolved Solids	458	40.0	D	mg/L	1	8/21/2015 1:22:00 PM	20906

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
				Page 4 of 40

Analytical ReportLab Order: **1508976**Date Reported: **9/15/2015****Hall Environmental Analysis Laboratory, Inc.**

CLIENT: Western Refining Southwest, Inc.
Project: Cross Gradient Wells 8-19-15
Lab ID: 1508976-001D

Client Sample ID: MW-1
Collection Date: 8/19/2015 7:20:00 AM
Matrix: Aqueous

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 7470: MERCURY							Analyst: MED
Mercury	ND	0.00020		mg/L	1	9/2/2015 12:57:47 PM	21096
EPA 6010B: TOTAL RECOVERABLE METALS							Analyst: MED
Arsenic	ND	0.020		mg/L	1	8/25/2015 2:03:34 PM	20922
Barium	0.031	0.020		mg/L	1	8/25/2015 2:03:34 PM	20922
Cadmium	ND	0.0020		mg/L	1	8/25/2015 2:03:34 PM	20922
Chromium	ND	0.0060		mg/L	1	8/25/2015 2:03:34 PM	20922
Lead	ND	0.0050		mg/L	1	8/25/2015 2:03:34 PM	20922
Selenium	ND	0.050		mg/L	1	8/25/2015 2:03:34 PM	20922
Silver	ND	0.0050		mg/L	1	8/25/2015 2:03:34 PM	20922

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
				Page 5 of 40

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order: 1508976

Date Reported: 9/15/2015

CLIENT: Western Refining Southwest, Inc.
Project: Cross Gradient Wells 8-19-15
Lab ID: 1508976-001E

Client Sample ID: MW-1
Collection Date: 8/19/2015 7:20:00 AM
Matrix: Aqueous

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 7470: MERCURY							Analyst: MED
Mercury	ND	0.00020		mg/L	1	9/2/2015 12:59:54 PM	21096
EPA METHOD 6010B: DISSOLVED METALS							Analyst: MED
Arsenic	ND	0.020		mg/L	1	8/28/2015 2:28:06 PM	B28540
Barium	0.031	0.020		mg/L	1	8/28/2015 2:28:06 PM	B28540
Cadmium	ND	0.0020		mg/L	1	8/28/2015 2:28:06 PM	B28540
Calcium	77	1.0		mg/L	1	8/28/2015 2:28:06 PM	B28540
Chromium	ND	0.0060		mg/L	1	8/28/2015 2:28:06 PM	B28540
Copper	ND	0.0060		mg/L	1	8/28/2015 2:28:06 PM	B28540
Iron	ND	0.020		mg/L	1	8/28/2015 2:28:06 PM	B28540
Lead	ND	0.0050		mg/L	1	8/28/2015 2:28:06 PM	B28540
Magnesium	17	1.0		mg/L	1	8/28/2015 2:28:06 PM	B28540
Manganese	0.037	0.0020		mg/L	1	8/28/2015 2:28:06 PM	B28540
Potassium	2.2	1.0		mg/L	1	8/28/2015 2:28:06 PM	B28540
Selenium	ND	0.050		mg/L	1	8/28/2015 2:28:06 PM	B28540
Silver	ND	0.0050		mg/L	1	8/28/2015 2:28:06 PM	B28540
Sodium	68	1.0		mg/L	1	8/28/2015 2:28:06 PM	B28540
Uranium	ND	0.10		mg/L	1	8/28/2015 2:28:06 PM	B28540
Zinc	0.027	0.020		mg/L	1	8/28/2015 2:28:06 PM	B28540

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
				Page 6 of 40

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order: 1508976

Date Reported: 9/15/2015

CLIENT: Western Refining Southwest, Inc.
Project: Cross Gradient Wells 8-19-15
Lab ID: 1508976-001F

Client Sample ID: MW-1
Collection Date: 8/19/2015 7:20:00 AM
Matrix: Aqueous

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D: DIESEL RANGE							Analyst: TOM
Diesel Range Organics (DRO)	ND	0.20		mg/L	1	8/24/2015 11:14:36 AM	20920
Motor Oil Range Organics (MRO)	ND	2.5		mg/L	1	8/24/2015 11:14:36 AM	20920
Surr: DNOP	121	84.6-165		%REC	1	8/24/2015 11:14:36 AM	20920

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Analytical Report

Lab Order: 1508976

Hall Environmental Analysis Laboratory, Inc.

Date Reported: 9/15/2015

CLIENT: Western Refining Southwest, Inc.
Project: Cross Gradient Wells 8-19-15
Lab ID: 1508976-002A

Client Sample ID: MW-13
Collection Date: 8/19/2015 7:40:00 AM
Matrix: Aqueous

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES				Analyst: DJF			
Benzene	ND	1.0		µg/L	1	8/21/2015 1:58:50 PM	R28392
Toluene	ND	1.0		µg/L	1	8/21/2015 1:58:50 PM	R28392
Ethylbenzene	ND	1.0		µg/L	1	8/21/2015 1:58:50 PM	R28392
Methyl tert-butyl ether (MTBE)	ND	1.0		µg/L	1	8/21/2015 1:58:50 PM	R28392
1,2,4-Trimethylbenzene	ND	1.0		µg/L	1	8/21/2015 1:58:50 PM	R28392
1,3,5-Trimethylbenzene	ND	1.0		µg/L	1	8/21/2015 1:58:50 PM	R28392
1,2-Dichloroethane (EDC)	ND	1.0		µg/L	1	8/21/2015 1:58:50 PM	R28392
1,2-Dibromoethane (EDB)	ND	1.0		µg/L	1	8/21/2015 1:58:50 PM	R28392
Naphthalene	ND	2.0		µg/L	1	8/21/2015 1:58:50 PM	R28392
1-Methylnaphthalene	ND	4.0		µg/L	1	8/21/2015 1:58:50 PM	R28392
2-Methylnaphthalene	ND	4.0		µg/L	1	8/21/2015 1:58:50 PM	R28392
Acetone	ND	10		µg/L	1	8/21/2015 1:58:50 PM	R28392
Bromobenzene	ND	1.0		µg/L	1	8/21/2015 1:58:50 PM	R28392
Bromodichloromethane	ND	1.0		µg/L	1	8/21/2015 1:58:50 PM	R28392
Bromoform	ND	1.0		µg/L	1	8/21/2015 1:58:50 PM	R28392
Bromomethane	ND	3.0		µg/L	1	8/21/2015 1:58:50 PM	R28392
2-Butanone	ND	10		µg/L	1	8/21/2015 1:58:50 PM	R28392
Carbon disulfide	ND	10		µg/L	1	8/21/2015 1:58:50 PM	R28392
Carbon Tetrachloride	ND	1.0		µg/L	1	8/21/2015 1:58:50 PM	R28392
Chlorobenzene	ND	1.0		µg/L	1	8/21/2015 1:58:50 PM	R28392
Chloroethane	ND	2.0		µg/L	1	8/21/2015 1:58:50 PM	R28392
Chloroform	ND	1.0		µg/L	1	8/21/2015 1:58:50 PM	R28392
Chloromethane	ND	3.0		µg/L	1	8/21/2015 1:58:50 PM	R28392
2-Chlorotoluene	ND	1.0		µg/L	1	8/21/2015 1:58:50 PM	R28392
4-Chlorotoluene	ND	1.0		µg/L	1	8/21/2015 1:58:50 PM	R28392
cis-1,2-DCE	ND	1.0		µg/L	1	8/21/2015 1:58:50 PM	R28392
cis-1,3-Dichloropropene	ND	1.0		µg/L	1	8/21/2015 1:58:50 PM	R28392
1,2-Dibromo-3-chloropropane	ND	2.0		µg/L	1	8/21/2015 1:58:50 PM	R28392
Dibromochloromethane	ND	1.0		µg/L	1	8/21/2015 1:58:50 PM	R28392
Dibromomethane	ND	1.0		µg/L	1	8/21/2015 1:58:50 PM	R28392
1,2-Dichlorobenzene	ND	1.0		µg/L	1	8/21/2015 1:58:50 PM	R28392
1,3-Dichlorobenzene	ND	1.0		µg/L	1	8/21/2015 1:58:50 PM	R28392
1,4-Dichlorobenzene	ND	1.0		µg/L	1	8/21/2015 1:58:50 PM	R28392
Dichlorodifluoromethane	ND	1.0		µg/L	1	8/21/2015 1:58:50 PM	R28392
1,1-Dichloroethane	ND	1.0		µg/L	1	8/21/2015 1:58:50 PM	R28392
1,1-Dichloroethene	ND	1.0		µg/L	1	8/21/2015 1:58:50 PM	R28392
1,2-Dichloropropane	ND	1.0		µg/L	1	8/21/2015 1:58:50 PM	R28392
1,3-Dichloropropane	ND	1.0		µg/L	1	8/21/2015 1:58:50 PM	R28392
2,2-Dichloropropane	ND	2.0		µg/L	1	8/21/2015 1:58:50 PM	R28392
1,1-Dichloropropene	ND	1.0		µg/L	1	8/21/2015 1:58:50 PM	R28392
Hexachlorobutadiene	ND	1.0		µg/L	1	8/21/2015 1:58:50 PM	R28392

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
				Page 8 of 40

Analytical Report

Lab Order: 1508976

Date Reported: 9/15/2015

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Southwest, Inc.
Project: Cross Gradient Wells 8-19-15
Lab ID: 1508976-002A

Client Sample ID: MW-13
Collection Date: 8/19/2015 7:40:00 AM
Matrix: Aqueous

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES				Analyst: DJF			
2-Hexanone	ND	10		µg/L	1	8/21/2015 1:58:50 PM	R28392
Isopropylbenzene	ND	1.0		µg/L	1	8/21/2015 1:58:50 PM	R28392
4-Isopropyltoluene	ND	1.0		µg/L	1	8/21/2015 1:58:50 PM	R28392
4-Methyl-2-pentanone	ND	10		µg/L	1	8/21/2015 1:58:50 PM	R28392
Methylene Chloride	ND	3.0		µg/L	1	8/21/2015 1:58:50 PM	R28392
n-Butylbenzene	ND	3.0		µg/L	1	8/21/2015 1:58:50 PM	R28392
n-Propylbenzene	ND	1.0		µg/L	1	8/21/2015 1:58:50 PM	R28392
sec-Butylbenzene	ND	1.0		µg/L	1	8/21/2015 1:58:50 PM	R28392
Styrene	ND	1.0		µg/L	1	8/21/2015 1:58:50 PM	R28392
tert-Butylbenzene	ND	1.0		µg/L	1	8/21/2015 1:58:50 PM	R28392
1,1,1,2-Tetrachloroethane	ND	1.0		µg/L	1	8/21/2015 1:58:50 PM	R28392
1,1,2,2-Tetrachloroethane	ND	2.0		µg/L	1	8/21/2015 1:58:50 PM	R28392
Tetrachloroethene (PCE)	ND	1.0		µg/L	1	8/21/2015 1:58:50 PM	R28392
trans-1,2-DCE	ND	1.0		µg/L	1	8/21/2015 1:58:50 PM	R28392
trans-1,3-Dichloropropene	ND	1.0		µg/L	1	8/21/2015 1:58:50 PM	R28392
1,2,3-Trichlorobenzene	ND	1.0		µg/L	1	8/21/2015 1:58:50 PM	R28392
1,2,4-Trichlorobenzene	ND	1.0		µg/L	1	8/21/2015 1:58:50 PM	R28392
1,1,1-Trichloroethane	ND	1.0		µg/L	1	8/21/2015 1:58:50 PM	R28392
1,1,2-Trichloroethane	ND	1.0		µg/L	1	8/21/2015 1:58:50 PM	R28392
Trichloroethene (TCE)	ND	1.0		µg/L	1	8/21/2015 1:58:50 PM	R28392
Trichlorofluoromethane	ND	1.0		µg/L	1	8/21/2015 1:58:50 PM	R28392
1,2,3-Trichloropropane	ND	2.0		µg/L	1	8/21/2015 1:58:50 PM	R28392
Vinyl chloride	ND	1.0		µg/L	1	8/21/2015 1:58:50 PM	R28392
Xylenes, Total	ND	1.5		µg/L	1	8/21/2015 1:58:50 PM	R28392
Surr: 1,2-Dichloroethane-d4	96.5	70-130		%REC	1	8/21/2015 1:58:50 PM	R28392
Surr: 4-Bromofluorobenzene	105	70-130		%REC	1	8/21/2015 1:58:50 PM	R28392
Surr: Dibromofluoromethane	108	70-130		%REC	1	8/21/2015 1:58:50 PM	R28392
Surr: Toluene-d8	95.4	70-130		%REC	1	8/21/2015 1:58:50 PM	R28392

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
				Page 9 of 40

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order: 1508976

Date Reported: 9/15/2015

CLIENT: Western Refining Southwest, Inc.
Project: Cross Gradient Wells 8-19-15
Lab ID: 1508976-002B

Client Sample ID: MW-13
Collection Date: 8/19/2015 7:40:00 AM
Matrix: Aqueous

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D: GASOLINE RANGE							Analyst: DJF
Gasoline Range Organics (GRO)	ND	0.050		mg/L	1	8/21/2015 1:58:50 PM	C28392
Surr: BFB	93.5	70-130		%REC	1	8/21/2015 1:58:50 PM	C28392

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order: 1508976

Date Reported: 9/15/2015

CLIENT: Western Refining Southwest, Inc.
Project: Cross Gradient Wells 8-19-15
Lab ID: 1508976-002C

Client Sample ID: MW-13
Collection Date: 8/19/2015 7:40:00 AM
Matrix: Aqueous

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
CARBON DIOXIDE							Analyst: JRR
Total Carbon Dioxide	890	1.0	H	mg CO2/L	1	8/27/2015 12:27:24 PM	R28535
EPA METHOD 300.0: ANIONS							Analyst: LGT
Fluoride	ND	0.10		mg/L	1	8/20/2015 6:22:01 PM	R28365
Chloride	170	10		mg/L	20	8/20/2015 6:34:25 PM	R28365
Nitrogen, Nitrite (As N)	0.16	0.10		mg/L	1	8/20/2015 6:22:01 PM	R28365
Bromide	1.2	0.10		mg/L	1	8/20/2015 6:22:01 PM	R28365
Nitrogen, Nitrate (As N)	0.25	0.10		mg/L	1	8/20/2015 6:22:01 PM	R28365
Phosphorus, Orthophosphate (As P)	ND	0.50		mg/L	1	8/20/2015 6:22:01 PM	R28365
Sulfate	1100	25	*	mg/L	50	8/28/2015 8:59:34 PM	R28543
SM2510B: SPECIFIC CONDUCTANCE							Analyst: JRR
Conductivity	3700	0.010		µmhos/cm	1	8/27/2015 12:27:24 PM	R28535
SM2320B: ALKALINITY							Analyst: JRR
Bicarbonate (As CaCO3)	909.4	20.00		mg/L CaCO3	1	8/27/2015 12:27:24 PM	R28535
Carbonate (As CaCO3)	ND	2.000		mg/L CaCO3	1	8/27/2015 12:27:24 PM	R28535
Total Alkalinity (as CaCO3)	909.4	20.00		mg/L CaCO3	1	8/27/2015 12:27:24 PM	R28535
SM2540C MOD: TOTAL DISSOLVED SOLIDS							Analyst: KS
Total Dissolved Solids	2790	40.0	*D	mg/L	1	8/21/2015 1:22:00 PM	20906

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Analytical ReportLab Order: **1508976**Date Reported: **9/15/2015****Hall Environmental Analysis Laboratory, Inc.**

CLIENT: Western Refining Southwest, Inc.
Project: Cross Gradient Wells 8-19-15
Lab ID: 1508976-002D

Client Sample ID: MW-13
Collection Date: 8/19/2015 7:40:00 AM
Matrix: Aqueous

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 7470: MERCURY							Analyst: MED
Mercury	ND	0.00020		mg/L	1	9/2/2015 1:02:01 PM	21096
EPA 6010B: TOTAL RECOVERABLE METALS							Analyst: MED
Arsenic	ND	0.020		mg/L	1	8/25/2015 2:05:18 PM	20922
Barium	0.022	0.020		mg/L	1	8/25/2015 2:05:18 PM	20922
Cadmium	ND	0.0020		mg/L	1	8/25/2015 2:05:18 PM	20922
Chromium	ND	0.0060		mg/L	1	8/25/2015 2:05:18 PM	20922
Lead	ND	0.0050		mg/L	1	8/25/2015 2:05:18 PM	20922
Selenium	ND	0.050		mg/L	1	8/25/2015 2:05:18 PM	20922
Silver	ND	0.0050		mg/L	1	8/25/2015 2:05:18 PM	20922

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order: 1508976

Date Reported: 9/15/2015

CLIENT: Western Refining Southwest, Inc.
Project: Cross Gradient Wells 8-19-15
Lab ID: 1508976-002E

Client Sample ID: MW-13
Collection Date: 8/19/2015 7:40:00 AM
Matrix: Aqueous

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 7470: MERCURY							Analyst: MED
Mercury	ND	0.00020		mg/L	1	9/2/2015 1:04:09 PM	21096
EPA METHOD 6010B: DISSOLVED METALS							Analyst: MED
Arsenic	ND	0.020		mg/L	1	8/28/2015 2:30:03 PM	B28540
Barium	0.023	0.020		mg/L	1	8/28/2015 2:30:03 PM	B28540
Cadmium	ND	0.0020		mg/L	1	8/28/2015 2:30:03 PM	B28540
Calcium	260	10		mg/L	10	8/28/2015 3:42:17 PM	B28540
Chromium	ND	0.0060		mg/L	1	8/28/2015 2:30:03 PM	B28540
Copper	ND	0.0060		mg/L	1	8/28/2015 2:30:03 PM	B28540
Iron	ND	0.020		mg/L	1	8/28/2015 2:30:03 PM	B28540
Lead	ND	0.0050		mg/L	1	8/28/2015 2:30:03 PM	B28540
Magnesium	96	1.0		mg/L	1	8/28/2015 2:30:03 PM	B28540
Manganese	0.60	0.0020		mg/L	1	8/28/2015 2:30:03 PM	B28540
Potassium	4.1	1.0		mg/L	1	8/28/2015 2:30:03 PM	B28540
Selenium	ND	0.050		mg/L	1	8/28/2015 2:30:03 PM	B28540
Silver	ND	0.0050		mg/L	1	8/28/2015 2:30:03 PM	B28540
Sodium	570	10		mg/L	10	8/28/2015 3:42:17 PM	B28540
Uranium	ND	0.10		mg/L	1	8/28/2015 2:30:03 PM	B28540
Zinc	0.027	0.020		mg/L	1	8/28/2015 2:30:03 PM	B28540

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order: 1508976

Date Reported: 9/15/2015

CLIENT: Western Refining Southwest, Inc.
Project: Cross Gradient Wells 8-19-15
Lab ID: 1508976-002F

Client Sample ID: MW-13
Collection Date: 8/19/2015 7:40:00 AM
Matrix: Aqueous

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D: DIESEL RANGE							Analyst: TOM
Diesel Range Organics (DRO)	0.28	0.20		mg/L	1	8/24/2015 12:36:01 PM	20920
Motor Oil Range Organics (MRO)	ND	2.5		mg/L	1	8/24/2015 12:36:01 PM	20920
Surr: DNOP	156	84.6-165		%REC	1	8/24/2015 12:36:01 PM	20920

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Analytical Report

Lab Order: 1508976

Hall Environmental Analysis Laboratory, Inc.

Date Reported: 9/15/2015

CLIENT: Western Refining Southwest, Inc.
Project: Cross Gradient Wells 8-19-15
Lab ID: 1508976-003A

Client Sample ID: MW-27
Collection Date: 8/19/2015 9:00:00 AM
Matrix: Aqueous

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: DJF
Benzene	ND	2.0	D	µg/L	2	8/21/2015 3:21:44 PM	R28392
Toluene	ND	2.0	D	µg/L	2	8/21/2015 3:21:44 PM	R28392
Ethylbenzene	ND	2.0	D	µg/L	2	8/21/2015 3:21:44 PM	R28392
Methyl tert-butyl ether (MTBE)	ND	2.0	D	µg/L	2	8/21/2015 3:21:44 PM	R28392
1,2,4-Trimethylbenzene	ND	2.0	D	µg/L	2	8/21/2015 3:21:44 PM	R28392
1,3,5-Trimethylbenzene	ND	2.0	D	µg/L	2	8/21/2015 3:21:44 PM	R28392
1,2-Dichloroethane (EDC)	ND	2.0	D	µg/L	2	8/21/2015 3:21:44 PM	R28392
1,2-Dibromoethane (EDB)	ND	2.0	D	µg/L	2	8/21/2015 3:21:44 PM	R28392
Naphthalene	ND	4.0	D	µg/L	2	8/21/2015 3:21:44 PM	R28392
1-Methylnaphthalene	ND	8.0	D	µg/L	2	8/21/2015 3:21:44 PM	R28392
2-Methylnaphthalene	ND	8.0	D	µg/L	2	8/21/2015 3:21:44 PM	R28392
Acetone	ND	20	D	µg/L	2	8/21/2015 3:21:44 PM	R28392
Bromobenzene	ND	2.0	D	µg/L	2	8/21/2015 3:21:44 PM	R28392
Bromodichloromethane	ND	2.0	D	µg/L	2	8/21/2015 3:21:44 PM	R28392
Bromoform	ND	2.0	D	µg/L	2	8/21/2015 3:21:44 PM	R28392
Bromomethane	ND	6.0	D	µg/L	2	8/21/2015 3:21:44 PM	R28392
2-Butanone	ND	20	D	µg/L	2	8/21/2015 3:21:44 PM	R28392
Carbon disulfide	ND	20	D	µg/L	2	8/21/2015 3:21:44 PM	R28392
Carbon Tetrachloride	ND	2.0	D	µg/L	2	8/21/2015 3:21:44 PM	R28392
Chlorobenzene	ND	2.0	D	µg/L	2	8/21/2015 3:21:44 PM	R28392
Chloroethane	ND	4.0	D	µg/L	2	8/21/2015 3:21:44 PM	R28392
Chloroform	ND	2.0	D	µg/L	2	8/21/2015 3:21:44 PM	R28392
Chloromethane	ND	6.0	D	µg/L	2	8/21/2015 3:21:44 PM	R28392
2-Chlorotoluene	ND	2.0	D	µg/L	2	8/21/2015 3:21:44 PM	R28392
4-Chlorotoluene	ND	2.0	D	µg/L	2	8/21/2015 3:21:44 PM	R28392
cis-1,2-DCE	ND	2.0	D	µg/L	2	8/21/2015 3:21:44 PM	R28392
cis-1,3-Dichloropropene	ND	2.0	D	µg/L	2	8/21/2015 3:21:44 PM	R28392
1,2-Dibromo-3-chloropropane	ND	4.0	D	µg/L	2	8/21/2015 3:21:44 PM	R28392
Dibromochloromethane	ND	2.0	D	µg/L	2	8/21/2015 3:21:44 PM	R28392
Dibromomethane	ND	2.0	D	µg/L	2	8/21/2015 3:21:44 PM	R28392
1,2-Dichlorobenzene	ND	2.0	D	µg/L	2	8/21/2015 3:21:44 PM	R28392
1,3-Dichlorobenzene	ND	2.0	D	µg/L	2	8/21/2015 3:21:44 PM	R28392
1,4-Dichlorobenzene	ND	2.0	D	µg/L	2	8/21/2015 3:21:44 PM	R28392
Dichlorodifluoromethane	ND	2.0	D	µg/L	2	8/21/2015 3:21:44 PM	R28392
1,1-Dichloroethane	ND	2.0	D	µg/L	2	8/21/2015 3:21:44 PM	R28392
1,1-Dichloroethene	ND	2.0	D	µg/L	2	8/21/2015 3:21:44 PM	R28392
1,2-Dichloropropane	ND	2.0	D	µg/L	2	8/21/2015 3:21:44 PM	R28392
1,3-Dichloropropane	ND	2.0	D	µg/L	2	8/21/2015 3:21:44 PM	R28392
2,2-Dichloropropane	ND	4.0	D	µg/L	2	8/21/2015 3:21:44 PM	R28392
1,1-Dichloropropene	ND	2.0	D	µg/L	2	8/21/2015 3:21:44 PM	R28392
Hexachlorobutadiene	ND	2.0	D	µg/L	2	8/21/2015 3:21:44 PM	R28392

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Analytical Report

Lab Order: 1508976

Date Reported: 9/15/2015

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Southwest, Inc.
Project: Cross Gradient Wells 8-19-15
Lab ID: 1508976-003A

Client Sample ID: MW-27
Collection Date: 8/19/2015 9:00:00 AM
Matrix: Aqueous

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: DJF
2-Hexanone	ND	20	D	µg/L	2	8/21/2015 3:21:44 PM	R28392
Isopropylbenzene	ND	2.0	D	µg/L	2	8/21/2015 3:21:44 PM	R28392
4-Isopropyltoluene	ND	2.0	D	µg/L	2	8/21/2015 3:21:44 PM	R28392
4-Methyl-2-pentanone	ND	20	D	µg/L	2	8/21/2015 3:21:44 PM	R28392
Methylene Chloride	ND	6.0	D	µg/L	2	8/21/2015 3:21:44 PM	R28392
n-Butylbenzene	ND	6.0	D	µg/L	2	8/21/2015 3:21:44 PM	R28392
n-Propylbenzene	ND	2.0	D	µg/L	2	8/21/2015 3:21:44 PM	R28392
sec-Butylbenzene	ND	2.0	D	µg/L	2	8/21/2015 3:21:44 PM	R28392
Styrene	ND	2.0	D	µg/L	2	8/21/2015 3:21:44 PM	R28392
tert-Butylbenzene	ND	2.0	D	µg/L	2	8/21/2015 3:21:44 PM	R28392
1,1,1,2-Tetrachloroethane	ND	2.0	D	µg/L	2	8/21/2015 3:21:44 PM	R28392
1,1,2,2-Tetrachloroethane	ND	4.0	D	µg/L	2	8/21/2015 3:21:44 PM	R28392
Tetrachloroethene (PCE)	ND	2.0	D	µg/L	2	8/21/2015 3:21:44 PM	R28392
trans-1,2-DCE	ND	2.0	D	µg/L	2	8/21/2015 3:21:44 PM	R28392
trans-1,3-Dichloropropene	ND	2.0	D	µg/L	2	8/21/2015 3:21:44 PM	R28392
1,2,3-Trichlorobenzene	ND	2.0	D	µg/L	2	8/21/2015 3:21:44 PM	R28392
1,2,4-Trichlorobenzene	ND	2.0	D	µg/L	2	8/21/2015 3:21:44 PM	R28392
1,1,1-Trichloroethane	ND	2.0	D	µg/L	2	8/21/2015 3:21:44 PM	R28392
1,1,2-Trichloroethane	ND	2.0	D	µg/L	2	8/21/2015 3:21:44 PM	R28392
Trichloroethene (TCE)	ND	2.0	D	µg/L	2	8/21/2015 3:21:44 PM	R28392
Trichlorofluoromethane	ND	2.0	D	µg/L	2	8/21/2015 3:21:44 PM	R28392
1,2,3-Trichloropropane	ND	4.0	D	µg/L	2	8/21/2015 3:21:44 PM	R28392
Vinyl chloride	ND	2.0	D	µg/L	2	8/21/2015 3:21:44 PM	R28392
Xylenes, Total	ND	3.0	D	µg/L	2	8/21/2015 3:21:44 PM	R28392
Surr: 1,2-Dichloroethane-d4	93.9	70-130	D	%REC	2	8/21/2015 3:21:44 PM	R28392
Surr: 4-Bromofluorobenzene	107	70-130	D	%REC	2	8/21/2015 3:21:44 PM	R28392
Surr: Dibromofluoromethane	109	70-130	D	%REC	2	8/21/2015 3:21:44 PM	R28392
Surr: Toluene-d8	99.1	70-130	D	%REC	2	8/21/2015 3:21:44 PM	R28392

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Analytical ReportLab Order: **1508976**Date Reported: **9/15/2015****Hall Environmental Analysis Laboratory, Inc.****CLIENT:** Western Refining Southwest, Inc.**Client Sample ID:** MW-27**Project:** Cross Gradient Wells 8-19-15**Collection Date:** 8/19/2015 9:00:00 AM**Lab ID:** 1508976-003B**Matrix:** Aqueous

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D: GASOLINE RANGE							Analyst: DJF
Gasoline Range Organics (GRO)	0.25	0.10		mg/L	2	8/21/2015 3:21:44 PM	C28392
Surr: BFB	100	70-130		%REC	2	8/21/2015 3:21:44 PM	C28392

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order: 1508976

Date Reported: 9/15/2015

CLIENT: Western Refining Southwest, Inc.
Project: Cross Gradient Wells 8-19-15
Lab ID: 1508976-003C

Client Sample ID: MW-27
Collection Date: 8/19/2015 9:00:00 AM
Matrix: Aqueous

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
CARBON DIOXIDE							Analyst: JRR
Total Carbon Dioxide	490	1.0	H	mg CO2/L	1	8/27/2015 1:01:07 PM	R28535
EPA METHOD 300.0: ANIONS							Analyst: LGT
Fluoride	ND	0.50		mg/L	5	8/20/2015 7:11:38 PM	R28365
Chloride	450	50	*	mg/L	100	8/28/2015 9:11:58 PM	R28543
Nitrogen, Nitrite (As N)	ND	0.50		mg/L	5	8/20/2015 7:11:38 PM	R28365
Bromide	4.4	0.50		mg/L	5	8/20/2015 7:11:38 PM	R28365
Nitrogen, Nitrate (As N)	ND	0.50		mg/L	5	8/20/2015 7:11:38 PM	R28365
Phosphorus, Orthophosphate (As P)	ND	2.5		mg/L	5	8/20/2015 7:11:38 PM	R28365
Sulfate	2200	50	*	mg/L	100	8/28/2015 9:11:58 PM	R28543
SM2510B: SPECIFIC CONDUCTANCE							Analyst: JRR
Conductivity	5400	0.010		µmhos/cm	1	8/27/2015 1:01:07 PM	R28535
SM2320B: ALKALINITY							Analyst: JRR
Bicarbonate (As CaCO3)	527.8	20.00		mg/L CaCO3	1	8/27/2015 1:01:07 PM	R28535
Carbonate (As CaCO3)	ND	2.000		mg/L CaCO3	1	8/27/2015 1:01:07 PM	R28535
Total Alkalinity (as CaCO3)	527.8	20.00		mg/L CaCO3	1	8/27/2015 1:01:07 PM	R28535
SM2540C MOD: TOTAL DISSOLVED SOLIDS							Analyst: KS
Total Dissolved Solids	4730	100	*D	mg/L	1	8/21/2015 1:22:00 PM	20906

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Analytical ReportLab Order: **1508976**Date Reported: **9/15/2015****Hall Environmental Analysis Laboratory, Inc.**

CLIENT: Western Refining Southwest, Inc.
Project: Cross Gradient Wells 8-19-15
Lab ID: 1508976-003D

Client Sample ID: MW-27
Collection Date: 8/19/2015 9:00:00 AM
Matrix: Aqueous

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 7470: MERCURY							Analyst: MED
Mercury	ND	0.00020		mg/L	1	9/2/2015 1:06:09 PM	21096
EPA 6010B: TOTAL RECOVERABLE METALS							Analyst: MED
Arsenic	ND	0.020		mg/L	1	8/25/2015 2:07:12 PM	20922
Barium	0.068	0.020		mg/L	1	8/25/2015 2:07:12 PM	20922
Cadmium	ND	0.0020		mg/L	1	8/25/2015 2:07:12 PM	20922
Chromium	ND	0.0060		mg/L	1	8/25/2015 2:07:12 PM	20922
Lead	ND	0.0050		mg/L	1	8/25/2015 2:07:12 PM	20922
Selenium	ND	0.050		mg/L	1	8/25/2015 2:07:12 PM	20922
Silver	ND	0.0050		mg/L	1	8/25/2015 2:07:12 PM	20922

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order: 1508976

Date Reported: 9/15/2015

CLIENT: Western Refining Southwest, Inc.
Project: Cross Gradient Wells 8-19-15
Lab ID: 1508976-003E

Client Sample ID: MW-27
Collection Date: 8/19/2015 9:00:00 AM
Matrix: Aqueous

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 7470: MERCURY							Analyst: MED
Mercury	ND	0.00020		mg/L	1	9/2/2015 1:08:10 PM	21096
EPA METHOD 6010B: DISSOLVED METALS							Analyst: MED
Arsenic	ND	0.020		mg/L	1	8/28/2015 2:31:54 PM	B28540
Barium	0.054	0.020		mg/L	1	8/28/2015 2:31:54 PM	B28540
Cadmium	ND	0.0020		mg/L	1	8/28/2015 2:31:54 PM	B28540
Calcium	590	10		mg/L	10	8/28/2015 3:44:17 PM	B28540
Chromium	ND	0.0060		mg/L	1	8/28/2015 2:31:54 PM	B28540
Copper	ND	0.0060		mg/L	1	8/28/2015 2:31:54 PM	B28540
Iron	0.13	0.020		mg/L	1	8/28/2015 2:31:54 PM	B28540
Lead	ND	0.0050		mg/L	1	8/28/2015 2:31:54 PM	B28540
Magnesium	93	1.0		mg/L	1	8/28/2015 2:31:54 PM	B28540
Manganese	6.0	0.020		mg/L	10	8/28/2015 3:44:17 PM	B28540
Potassium	5.8	1.0		mg/L	1	8/28/2015 2:31:54 PM	B28540
Selenium	ND	0.050		mg/L	1	8/28/2015 2:31:54 PM	B28540
Silver	ND	0.0050		mg/L	1	8/28/2015 2:31:54 PM	B28540
Sodium	730	10		mg/L	10	8/28/2015 3:44:17 PM	B28540
Uranium	ND	0.10		mg/L	1	8/28/2015 2:31:54 PM	B28540
Zinc	ND	0.020		mg/L	1	8/28/2015 2:31:54 PM	B28540

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order: 1508976

Date Reported: 9/15/2015

CLIENT: Western Refining Southwest, Inc.
Project: Cross Gradient Wells 8-19-15
Lab ID: 1508976-003F

Client Sample ID: MW-27
Collection Date: 8/19/2015 9:00:00 AM
Matrix: Aqueous

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D: DIESEL RANGE							Analyst: TOM
Diesel Range Organics (DRO)	3.9	0.20		mg/L	1	8/24/2015 1:03:02 PM	20920
Motor Oil Range Organics (MRO)	ND	2.5		mg/L	1	8/24/2015 1:03:02 PM	20920
Surr: DNOP	118	84.6-165		%REC	1	8/24/2015 1:03:02 PM	20920

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Analytical Report

Lab Order: 1508976

Hall Environmental Analysis Laboratory, Inc.

Date Reported: 9/15/2015

CLIENT: Western Refining Southwest, Inc.
Project: Cross Gradient Wells 8-19-15
Lab ID: 1508976-004A

Client Sample ID: MW-32
Collection Date: 8/19/2015 8:00:00 AM
Matrix: Aqueous

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES				Analyst: DJF			
Benzene	ND	1.0		µg/L	1	8/21/2015 3:49:21 PM	R28392
Toluene	ND	1.0		µg/L	1	8/21/2015 3:49:21 PM	R28392
Ethylbenzene	ND	1.0		µg/L	1	8/21/2015 3:49:21 PM	R28392
Methyl tert-butyl ether (MTBE)	ND	1.0		µg/L	1	8/21/2015 3:49:21 PM	R28392
1,2,4-Trimethylbenzene	ND	1.0		µg/L	1	8/21/2015 3:49:21 PM	R28392
1,3,5-Trimethylbenzene	ND	1.0		µg/L	1	8/21/2015 3:49:21 PM	R28392
1,2-Dichloroethane (EDC)	ND	1.0		µg/L	1	8/21/2015 3:49:21 PM	R28392
1,2-Dibromoethane (EDB)	ND	1.0		µg/L	1	8/21/2015 3:49:21 PM	R28392
Naphthalene	ND	2.0		µg/L	1	8/21/2015 3:49:21 PM	R28392
1-Methylnaphthalene	ND	4.0		µg/L	1	8/21/2015 3:49:21 PM	R28392
2-Methylnaphthalene	ND	4.0		µg/L	1	8/21/2015 3:49:21 PM	R28392
Acetone	ND	10		µg/L	1	8/21/2015 3:49:21 PM	R28392
Bromobenzene	ND	1.0		µg/L	1	8/21/2015 3:49:21 PM	R28392
Bromodichloromethane	ND	1.0		µg/L	1	8/21/2015 3:49:21 PM	R28392
Bromoform	ND	1.0		µg/L	1	8/21/2015 3:49:21 PM	R28392
Bromomethane	ND	3.0		µg/L	1	8/21/2015 3:49:21 PM	R28392
2-Butanone	ND	10		µg/L	1	8/21/2015 3:49:21 PM	R28392
Carbon disulfide	ND	10		µg/L	1	8/21/2015 3:49:21 PM	R28392
Carbon Tetrachloride	ND	1.0		µg/L	1	8/21/2015 3:49:21 PM	R28392
Chlorobenzene	ND	1.0		µg/L	1	8/21/2015 3:49:21 PM	R28392
Chloroethane	ND	2.0		µg/L	1	8/21/2015 3:49:21 PM	R28392
Chloroform	ND	1.0		µg/L	1	8/21/2015 3:49:21 PM	R28392
Chloromethane	ND	3.0		µg/L	1	8/21/2015 3:49:21 PM	R28392
2-Chlorotoluene	ND	1.0		µg/L	1	8/21/2015 3:49:21 PM	R28392
4-Chlorotoluene	ND	1.0		µg/L	1	8/21/2015 3:49:21 PM	R28392
cis-1,2-DCE	ND	1.0		µg/L	1	8/21/2015 3:49:21 PM	R28392
cis-1,3-Dichloropropene	ND	1.0		µg/L	1	8/21/2015 3:49:21 PM	R28392
1,2-Dibromo-3-chloropropane	ND	2.0		µg/L	1	8/21/2015 3:49:21 PM	R28392
Dibromochloromethane	ND	1.0		µg/L	1	8/21/2015 3:49:21 PM	R28392
Dibromomethane	ND	1.0		µg/L	1	8/21/2015 3:49:21 PM	R28392
1,2-Dichlorobenzene	ND	1.0		µg/L	1	8/21/2015 3:49:21 PM	R28392
1,3-Dichlorobenzene	ND	1.0		µg/L	1	8/21/2015 3:49:21 PM	R28392
1,4-Dichlorobenzene	ND	1.0		µg/L	1	8/21/2015 3:49:21 PM	R28392
Dichlorodifluoromethane	ND	1.0		µg/L	1	8/21/2015 3:49:21 PM	R28392
1,1-Dichloroethane	ND	1.0		µg/L	1	8/21/2015 3:49:21 PM	R28392
1,1-Dichloroethene	ND	1.0		µg/L	1	8/21/2015 3:49:21 PM	R28392
1,2-Dichloropropane	ND	1.0		µg/L	1	8/21/2015 3:49:21 PM	R28392
1,3-Dichloropropane	ND	1.0		µg/L	1	8/21/2015 3:49:21 PM	R28392
2,2-Dichloropropane	ND	2.0		µg/L	1	8/21/2015 3:49:21 PM	R28392
1,1-Dichloropropene	ND	1.0		µg/L	1	8/21/2015 3:49:21 PM	R28392
Hexachlorobutadiene	ND	1.0		µg/L	1	8/21/2015 3:49:21 PM	R28392

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
				Page 22 of 40

Analytical Report

Lab Order: 1508976

Date Reported: 9/15/2015

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Southwest, Inc.
Project: Cross Gradient Wells 8-19-15
Lab ID: 1508976-004A

Client Sample ID: MW-32
Collection Date: 8/19/2015 8:00:00 AM
Matrix: Aqueous

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES				Analyst: DJF			
2-Hexanone	ND	10		µg/L	1	8/21/2015 3:49:21 PM	R28392
Isopropylbenzene	ND	1.0		µg/L	1	8/21/2015 3:49:21 PM	R28392
4-Isopropyltoluene	ND	1.0		µg/L	1	8/21/2015 3:49:21 PM	R28392
4-Methyl-2-pentanone	ND	10		µg/L	1	8/21/2015 3:49:21 PM	R28392
Methylene Chloride	ND	3.0		µg/L	1	8/21/2015 3:49:21 PM	R28392
n-Butylbenzene	ND	3.0		µg/L	1	8/21/2015 3:49:21 PM	R28392
n-Propylbenzene	ND	1.0		µg/L	1	8/21/2015 3:49:21 PM	R28392
sec-Butylbenzene	ND	1.0		µg/L	1	8/21/2015 3:49:21 PM	R28392
Styrene	ND	1.0		µg/L	1	8/21/2015 3:49:21 PM	R28392
tert-Butylbenzene	ND	1.0		µg/L	1	8/21/2015 3:49:21 PM	R28392
1,1,1,2-Tetrachloroethane	ND	1.0		µg/L	1	8/21/2015 3:49:21 PM	R28392
1,1,2,2-Tetrachloroethane	ND	2.0		µg/L	1	8/21/2015 3:49:21 PM	R28392
Tetrachloroethene (PCE)	ND	1.0		µg/L	1	8/21/2015 3:49:21 PM	R28392
trans-1,2-DCE	ND	1.0		µg/L	1	8/21/2015 3:49:21 PM	R28392
trans-1,3-Dichloropropene	ND	1.0		µg/L	1	8/21/2015 3:49:21 PM	R28392
1,2,3-Trichlorobenzene	ND	1.0		µg/L	1	8/21/2015 3:49:21 PM	R28392
1,2,4-Trichlorobenzene	ND	1.0		µg/L	1	8/21/2015 3:49:21 PM	R28392
1,1,1-Trichloroethane	ND	1.0		µg/L	1	8/21/2015 3:49:21 PM	R28392
1,1,2-Trichloroethane	ND	1.0		µg/L	1	8/21/2015 3:49:21 PM	R28392
Trichloroethene (TCE)	ND	1.0		µg/L	1	8/21/2015 3:49:21 PM	R28392
Trichlorofluoromethane	ND	1.0		µg/L	1	8/21/2015 3:49:21 PM	R28392
1,2,3-Trichloropropane	ND	2.0		µg/L	1	8/21/2015 3:49:21 PM	R28392
Vinyl chloride	ND	1.0		µg/L	1	8/21/2015 3:49:21 PM	R28392
Xylenes, Total	ND	1.5		µg/L	1	8/21/2015 3:49:21 PM	R28392
Surr: 1,2-Dichloroethane-d4	100	70-130		%REC	1	8/21/2015 3:49:21 PM	R28392
Surr: 4-Bromofluorobenzene	106	70-130		%REC	1	8/21/2015 3:49:21 PM	R28392
Surr: Dibromofluoromethane	119	70-130		%REC	1	8/21/2015 3:49:21 PM	R28392
Surr: Toluene-d8	98.7	70-130		%REC	1	8/21/2015 3:49:21 PM	R28392

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Analytical ReportLab Order: **1508976**Date Reported: **9/15/2015****Hall Environmental Analysis Laboratory, Inc.****CLIENT:** Western Refining Southwest, Inc.**Client Sample ID:** MW-32**Project:** Cross Gradient Wells 8-19-15**Collection Date:** 8/19/2015 8:00:00 AM**Lab ID:** 1508976-004B**Matrix:** Aqueous

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D: GASOLINE RANGE							Analyst: DJF
Gasoline Range Organics (GRO)	0.19	0.050		mg/L	1	8/21/2015 3:49:21 PM	C28392
Surr: BFB	88.7	70-130		%REC	1	8/21/2015 3:49:21 PM	C28392

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order: 1508976

Date Reported: 9/15/2015

CLIENT: Western Refining Southwest, Inc.
Project: Cross Gradient Wells 8-19-15
Lab ID: 1508976-004C

Client Sample ID: MW-32
Collection Date: 8/19/2015 8:00:00 AM
Matrix: Aqueous

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
CARBON DIOXIDE							Analyst: JRR
Total Carbon Dioxide	180	1.0	H	mg CO2/L	1	8/27/2015 1:22:01 PM	R28535
EPA METHOD 300.0: ANIONS							Analyst: LGT
Fluoride	ND	0.10		mg/L	1	8/20/2015 7:36:27 PM	R28365
Chloride	530	50	*	mg/L	100	8/28/2015 9:24:23 PM	R28543
Nitrogen, Nitrite (As N)	ND	2.0		mg/L	20	8/20/2015 7:48:51 PM	R28365
Bromide	4.5	0.10		mg/L	1	8/20/2015 7:36:27 PM	R28365
Nitrogen, Nitrate (As N)	55	2.0	*	mg/L	20	8/20/2015 7:48:51 PM	R28365
Phosphorus, Orthophosphate (As P)	ND	10		mg/L	20	8/20/2015 7:48:51 PM	R28365
Sulfate	1400	50	*	mg/L	100	8/28/2015 9:24:23 PM	R28543
SM2510B: SPECIFIC CONDUCTANCE							Analyst: JRR
Conductivity	4800	0.010		µmhos/cm	1	8/27/2015 1:22:01 PM	R28535
SM2320B: ALKALINITY							Analyst: JRR
Bicarbonate (As CaCO3)	201.7	20.00		mg/L CaCO3	1	8/27/2015 1:22:01 PM	R28535
Carbonate (As CaCO3)	ND	2.000		mg/L CaCO3	1	8/27/2015 1:22:01 PM	R28535
Total Alkalinity (as CaCO3)	201.7	20.00		mg/L CaCO3	1	8/27/2015 1:22:01 PM	R28535
SM2540C MOD: TOTAL DISSOLVED SOLIDS							Analyst: KS
Total Dissolved Solids	3610	40.0	*D	mg/L	1	8/21/2015 1:22:00 PM	20906

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Analytical ReportLab Order: **1508976**Date Reported: **9/15/2015****Hall Environmental Analysis Laboratory, Inc.**

CLIENT: Western Refining Southwest, Inc.
Project: Cross Gradient Wells 8-19-15
Lab ID: 1508976-004D

Client Sample ID: MW-32
Collection Date: 8/19/2015 8:00:00 AM
Matrix: Aqueous

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 7470: MERCURY							Analyst: MED
Mercury	ND	0.00020		mg/L	1	9/2/2015 1:10:13 PM	21096
EPA 6010B: TOTAL RECOVERABLE METALS							Analyst: MED
Arsenic	ND	0.020		mg/L	1	8/25/2015 2:14:09 PM	20922
Barium	ND	0.020		mg/L	1	8/25/2015 2:14:09 PM	20922
Cadmium	ND	0.0020		mg/L	1	8/25/2015 2:14:09 PM	20922
Chromium	ND	0.0060		mg/L	1	8/25/2015 2:14:09 PM	20922
Lead	ND	0.0050		mg/L	1	8/25/2015 2:14:09 PM	20922
Selenium	ND	0.050		mg/L	1	8/25/2015 2:14:09 PM	20922
Silver	ND	0.0050		mg/L	1	8/25/2015 2:14:09 PM	20922

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order: 1508976

Date Reported: 9/15/2015

CLIENT: Western Refining Southwest, Inc.
Project: Cross Gradient Wells 8-19-15
Lab ID: 1508976-004E

Client Sample ID: MW-32
Collection Date: 8/19/2015 8:00:00 AM
Matrix: Aqueous

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 7470: MERCURY							Analyst: MED
Mercury	ND	0.00020		mg/L	1	9/2/2015 1:12:15 PM	21096
EPA METHOD 6010B: DISSOLVED METALS							Analyst: MED
Arsenic	ND	0.020		mg/L	1	8/28/2015 2:39:36 PM	B28540
Barium	ND	0.020		mg/L	1	8/28/2015 2:39:36 PM	B28540
Cadmium	ND	0.0020		mg/L	1	8/28/2015 2:39:36 PM	B28540
Calcium	310	10		mg/L	10	8/28/2015 3:46:09 PM	B28540
Chromium	ND	0.0060		mg/L	1	8/28/2015 2:39:36 PM	B28540
Copper	ND	0.0060		mg/L	1	8/28/2015 2:39:36 PM	B28540
Iron	ND	0.020		mg/L	1	8/28/2015 2:39:36 PM	B28540
Lead	ND	0.0050		mg/L	1	8/28/2015 2:39:36 PM	B28540
Magnesium	45	10		mg/L	10	8/28/2015 3:46:09 PM	B28540
Manganese	ND	0.0020		mg/L	1	8/28/2015 2:39:36 PM	B28540
Potassium	3.9	1.0		mg/L	1	8/28/2015 2:39:36 PM	B28540
Selenium	ND	0.050		mg/L	1	8/28/2015 2:39:36 PM	B28540
Silver	ND	0.0050		mg/L	1	8/28/2015 2:39:36 PM	B28540
Sodium	750	10		mg/L	10	8/28/2015 3:46:09 PM	B28540
Uranium	ND	0.10		mg/L	1	8/28/2015 2:39:36 PM	B28540
Zinc	0.023	0.020		mg/L	1	8/28/2015 2:39:36 PM	B28540

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Analytical ReportLab Order: **1508976**Date Reported: **9/15/2015****Hall Environmental Analysis Laboratory, Inc.**

CLIENT: Western Refining Southwest, Inc.
Project: Cross Gradient Wells 8-19-15
Lab ID: 1508976-004F

Client Sample ID: MW-32
Collection Date: 8/19/2015 8:00:00 AM
Matrix: Aqueous

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D: DIESEL RANGE							Analyst: TOM
Diesel Range Organics (DRO)	0.28	0.20		mg/L	1	8/24/2015 1:30:03 PM	20920
Motor Oil Range Organics (MRO)	ND	2.5		mg/L	1	8/24/2015 1:30:03 PM	20920
Surr: DNOP	143	84.6-165		%REC	1	8/24/2015 1:30:03 PM	20920

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1508976

15-Sep-15

Client: Western Refining Southwest, Inc.

Project: Cross Gradient Wells 8-19-15

Sample ID MB	SampType: MBLK		TestCode: EPA Method 300.0: Anions							
Client ID: PBW	Batch ID: R28365		RunNo: 28365							
Prep Date:	Analysis Date: 8/20/2015		SeqNo: 856770		Units: mg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	ND	0.10								
Chloride	ND	0.50								
Nitrogen, Nitrite (As N)	ND	0.10								
Bromide	ND	0.10								
Nitrogen, Nitrate (As N)	ND	0.10								
Phosphorus, Orthophosphate (As P	ND	0.50								
Sulfate	ND	0.50								

Sample ID LCS	SampType: LCS		TestCode: EPA Method 300.0: Anions							
Client ID: LCSW	Batch ID: R28365		RunNo: 28365							
Prep Date:	Analysis Date: 8/20/2015		SeqNo: 856771		Units: mg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	0.52	0.10	0.5000	0	103	90	110			
Chloride	4.9	0.50	5.000	0	98.1	90	110			
Nitrogen, Nitrite (As N)	1.0	0.10	1.000	0	99.7	90	110			
Bromide	2.5	0.10	2.500	0	99.8	90	110			
Nitrogen, Nitrate (As N)	2.6	0.10	2.500	0	103	90	110			
Phosphorus, Orthophosphate (As P	5.1	0.50	5.000	0	101	90	110			
Sulfate	10	0.50	10.00	0	99.9	90	110			

Sample ID MB	SampType: MBLK		TestCode: EPA Method 300.0: Anions							
Client ID: PBW	Batch ID: R28543		RunNo: 28543							
Prep Date:	Analysis Date: 8/28/2015		SeqNo: 863412		Units: mg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	0.50								
Sulfate	ND	0.50								

Sample ID LCS	SampType: LCS		TestCode: EPA Method 300.0: Anions							
Client ID: LCSW	Batch ID: R28543		RunNo: 28543							
Prep Date:	Analysis Date: 8/28/2015		SeqNo: 863413		Units: mg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	5.1	0.50	5.000	0	102	90	110			
Sulfate	10	0.50	10.00	0	104	90	110			

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1508976

15-Sep-15

Client: Western Refining Southwest, Inc.

Project: Cross Gradient Wells 8-19-15

Sample ID	MB-20920		SampType: MBLK		TestCode: EPA Method 8015D: Diesel Range					
Client ID:	PBW		Batch ID: 20920		RunNo: 28404					
Prep Date:	8/21/2015		Analysis Date: 8/21/2015		SeqNo: 858161		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	0.20								
Motor Oil Range Organics (MRO)	ND	2.5								
Surr: DNOP	0.48		0.5000		96.1	84.6	165			

Sample ID	LCS-20920		SampType: LCS		TestCode: EPA Method 8015D: Diesel Range					
Client ID:	LCSW		Batch ID: 20920		RunNo: 28404					
Prep Date:	8/21/2015		Analysis Date: 8/21/2015		SeqNo: 858162		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	2.8	0.20	2.500	0	111	67.3	174			
Surr: DNOP	0.25		0.2500		101	84.6	165			

Sample ID	1508976-001FMS		SampType: MS		TestCode: EPA Method 8015D: Diesel Range					
Client ID:	MW-1		Batch ID: 20920		RunNo: 28409					
Prep Date:	8/21/2015		Analysis Date: 8/24/2015		SeqNo: 858304		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	3.1	0.20	2.500	0	122	67.2	210			
Surr: DNOP	0.32		0.2500		130	84.6	165			

Sample ID	1508976-001FMSD		SampType:	MSD		TestCode:	EPA Method 8015D: Diesel Range				
Client ID:	MW-1		Batch ID:	20920		RunNo:	28409				
Prep Date:	8/21/2015		Analysis Date:	8/24/2015		SeqNo:	858305		Units: mg/L		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Diesel Range Organics (DRO)	3.3	0.20	2.500	0	134	67.2	210	8.73	33.9		
Surr: DNOP	0.34		0.2500		135	84.6	165	0	0		

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1508976

15-Sep-15

Client: Western Refining Southwest, Inc.**Project:** Cross Gradient Wells 8-19-15

Sample ID rb	SampType: MBLK			TestCode: EPA Method 8260B: VOLATILES						
Client ID: PBW	Batch ID: R28392			RunNo: 28392						
Prep Date:	Analysis Date: 8/21/2015			SeqNo: 857554		Units: µg/L				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	1.0								
Toluene	ND	1.0								
Ethylbenzene	ND	1.0								
Methyl tert-butyl ether (MTBE)	ND	1.0								
1,2,4-Trimethylbenzene	ND	1.0								
1,3,5-Trimethylbenzene	ND	1.0								
1,2-Dichloroethane (EDC)	ND	1.0								
1,2-Dibromoethane (EDB)	ND	1.0								
Naphthalene	ND	2.0								
1-Methylnaphthalene	ND	4.0								
2-Methylnaphthalene	ND	4.0								
Acetone	ND	10								
Bromobenzene	ND	1.0								
Bromodichloromethane	ND	1.0								
Bromoform	ND	1.0								
Bromomethane	ND	3.0								
2-Butanone	ND	10								
Carbon disulfide	ND	10								
Carbon Tetrachloride	ND	1.0								
Chlorobenzene	ND	1.0								
Chloroethane	ND	2.0								
Chloroform	ND	1.0								
Chloromethane	ND	3.0								
2-Chlorotoluene	ND	1.0								
4-Chlorotoluene	ND	1.0								
cis-1,2-DCE	ND	1.0								
cis-1,3-Dichloropropene	ND	1.0								
1,2-Dibromo-3-chloropropane	ND	2.0								
Dibromochloromethane	ND	1.0								
Dibromomethane	ND	1.0								
1,2-Dichlorobenzene	ND	1.0								
1,3-Dichlorobenzene	ND	1.0								
1,4-Dichlorobenzene	ND	1.0								
Dichlorodifluoromethane	ND	1.0								
1,1-Dichloroethane	ND	1.0								
1,1-Dichloroethene	ND	1.0								
1,2-Dichloropropane	ND	1.0								
1,3-Dichloropropane	ND	1.0								
2,2-Dichloropropane	ND	2.0								

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1508976

15-Sep-15

Client: Western Refining Southwest, Inc.

Project: Cross Gradient Wells 8-19-15

Sample ID rb	SampType: MBLK			TestCode: EPA Method 8260B: VOLATILES						
Client ID: PBW	Batch ID: R28392			RunNo: 28392						
Prep Date:	Analysis Date: 8/21/2015			SeqNo: 857554		Units: µg/L				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,1-Dichloropropene	ND	1.0								
Hexachlorobutadiene	ND	1.0								
2-Hexanone	ND	10								
Isopropylbenzene	ND	1.0								
4-Isopropyltoluene	ND	1.0								
4-Methyl-2-pentanone	ND	10								
Methylene Chloride	ND	3.0								
n-Butylbenzene	ND	3.0								
n-Propylbenzene	ND	1.0								
sec-Butylbenzene	ND	1.0								
Styrene	ND	1.0								
tert-Butylbenzene	ND	1.0								
1,1,1,2-Tetrachloroethane	ND	1.0								
1,1,2,2-Tetrachloroethane	ND	2.0								
Tetrachloroethene (PCE)	ND	1.0								
trans-1,2-DCE	ND	1.0								
trans-1,3-Dichloropropene	ND	1.0								
1,2,3-Trichlorobenzene	ND	1.0								
1,2,4-Trichlorobenzene	ND	1.0								
1,1,1-Trichloroethane	ND	1.0								
1,1,2-Trichloroethane	ND	1.0								
Trichloroethene (TCE)	ND	1.0								
Trichlorofluoromethane	ND	1.0								
1,2,3-Trichloropropane	ND	2.0								
Vinyl chloride	ND	1.0								
Xylenes, Total	ND	1.5								
Surr: 1,2-Dichloroethane-d4	9.5		10.00		94.7	70	130			
Surr: 4-Bromofluorobenzene	11		10.00		108	70	130			
Surr: Dibromofluoromethane	11		10.00		107	70	130			
Surr: Toluene-d8	9.8		10.00		98.0	70	130			

Sample ID 100ng lcs	SampType: LCS			TestCode: EPA Method 8260B: VOLATILES						
Client ID: LCSW	Batch ID: R28392			RunNo: 28392						
Prep Date:	Analysis Date: 8/21/2015			SeqNo: 857555		Units: µg/L				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	22	1.0	20.00	0	111	70	130			
Toluene	21	1.0	20.00	0	106	70	130			
Chlorobenzene	20	1.0	20.00	0	102	70	130			

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1508976

15-Sep-15

Client: Western Refining Southwest, Inc.

Project: Cross Gradient Wells 8-19-15

Sample ID 100ng lcs	SampType: LCS			TestCode: EPA Method 8260B: VOLATILES						
Client ID: LCSW	Batch ID: R28392			RunNo: 28392						
Prep Date:	Analysis Date: 8/21/2015			SeqNo: 857555		Units: µg/L				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,1-Dichloroethene	21	1.0	20.00	0	107	70	130			
Trichloroethene (TCE)	22	1.0	20.00	0	112	70	130			
Surr: 1,2-Dichloroethane-d4	9.9		10.00		98.6	70	130			
Surr: 4-Bromofluorobenzene	11		10.00		107	70	130			
Surr: Dibromofluoromethane	11		10.00		114	70	130			
Surr: Toluene-d8	9.8		10.00		97.9	70	130			

Sample ID 1508976-002a ms	SampType: MS			TestCode: EPA Method 8260B: VOLATILES						
Client ID: MW-13	Batch ID: R28392			RunNo: 28392						
Prep Date:	Analysis Date: 8/21/2015			SeqNo: 857609		Units: µg/L				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	22	1.0	20.00	0	108	70	130			
Toluene	22	1.0	20.00	0	108	70	130			
Chlorobenzene	21	1.0	20.00	0	107	70	130			
1,1-Dichloroethene	20	1.0	20.00	0	101	70	130			
Trichloroethene (TCE)	22	1.0	20.00	0	111	70	130			
Surr: 1,2-Dichloroethane-d4	9.7		10.00		97.4	70	130			
Surr: 4-Bromofluorobenzene	11		10.00		113	70	130			
Surr: Dibromofluoromethane	11		10.00		108	70	130			
Surr: Toluene-d8	9.9		10.00		99.1	70	130			

Sample ID 1508976-002a msd	SampType: MSD			TestCode: EPA Method 8260B: VOLATILES						
Client ID: MW-13	Batch ID: R28392			RunNo: 28392						
Prep Date:	Analysis Date: 8/21/2015			SeqNo: 857611		Units: µg/L				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	21	1.0	20.00	0	106	70	130	1.28	20	
Toluene	22	1.0	20.00	0	108	70	130	0.409	20	
Chlorobenzene	21	1.0	20.00	0	107	70	130	0.566	20	
1,1-Dichloroethene	19	1.0	20.00	0	96.6	70	130	4.89	20	
Trichloroethene (TCE)	22	1.0	20.00	0	108	70	130	2.12	20	
Surr: 1,2-Dichloroethane-d4	10		10.00		99.5	70	130	0	0	
Surr: 4-Bromofluorobenzene	11		10.00		111	70	130	0	0	
Surr: Dibromofluoromethane	11		10.00		111	70	130	0	0	
Surr: Toluene-d8	9.9		10.00		98.8	70	130	0	0	

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1508976

15-Sep-15

Client: Western Refining Southwest, Inc.

Project: Cross Gradient Wells 8-19-15

Sample ID	MB-21096		SampType:	MBLK		TestCode:	EPA Method 7470: Mercury				
Client ID:	PBW		Batch ID:	21096		RunNo:	28621				
Prep Date:	9/1/2015		Analysis Date:	9/2/2015		SeqNo:	866014		Units: mg/L		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Mercurv	ND	0.00020									

Sample ID	LCS-21096			SampType:	LCS		TestCode:	EPA Method 7470: Mercury			
Client ID:	LCSW			Batch ID:	21096		RunNo:	28621			
Prep Date:	9/1/2015			Analysis Date:	9/2/2015		SeqNo:	866015		Units:	mg/L
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Mercury	0.0051	0.00020	0.005000	0	103	80	120				

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1508976

15-Sep-15

Client: Western Refining Southwest, Inc.

Project: Cross Gradient Wells 8-19-15

Sample ID	MB	SampType: MBLK			TestCode: EPA Method 6010B: Dissolved Metals					
Client ID:	PBW	Batch ID: B28540			RunNo: 28540					
Prep Date:		Analysis Date: 8/28/2015			SeqNo: 863200		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	ND	0.020								
Barium	ND	0.020								
Cadmium	ND	0.0020								
Calcium	ND	1.0								
Chromium	ND	0.0060								
Copper	ND	0.0060								
Iron	ND	0.020								
Lead	ND	0.0050								
Magnesium	ND	1.0								
Manganese	ND	0.0020								
Potassium	ND	1.0								
Selenium	ND	0.050								
Silver	ND	0.0050								
Sodium	ND	1.0								
Uranium	ND	0.10								
Zinc	ND	0.020								

Sample ID	LCS		SampType: LCS		TestCode: EPA Method 6010B: Dissolved Metals					
Client ID:	LCSW		Batch ID: B28540		RunNo: 28540					
Prep Date:			Analysis Date: 8/28/2015		SeqNo: 863201		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	0.51	0.020	0.5000	0	102	80	120			
Barium	0.47	0.020	0.5000	0	94.6	80	120			
Cadmium	0.48	0.0020	0.5000	0	95.9	80	120			
Calcium	57	1.0	50.00	0	114	80	120			
Chromium	0.47	0.0060	0.5000	0	93.4	80	120			
Copper	0.49	0.0060	0.5000	0	97.7	80	120			
Iron	0.47	0.020	0.5000	0	94.1	80	120			
Lead	0.48	0.0050	0.5000	0	96.0	80	120			
Magnesium	55	1.0	50.00	0	111	80	120			
Manganese	0.46	0.0020	0.5000	0	91.8	80	120			
Potassium	53	1.0	50.00	0	107	80	120			
Selenium	0.48	0.050	0.5000	0	95.5	80	120			
Silver	0.096	0.0050	0.1000	0	96.5	80	120			
Sodium	55	1.0	50.00	0	109	80	120			
Uranium	0.46	0.10	0.5000	0	92.8	80	120			
Zinc	0.47	0.020	0.5000	0	93.4	80	120			

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1508976

15-Sep-15

Client: Western Refining Southwest, Inc.

Project: Cross Gradient Wells 8-19-15

Sample ID	1508976-004EMS			SampType:	MS		TestCode:	EPA Method 6010B: Dissolved Metals		
Client ID:	MW-32			Batch ID:	B28540		RunNo:	28540		
Prep Date:				Analysis Date:	8/28/2015		SeqNo:	863248		Units: mg/L
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	0.60	0.020	0.5000	0.008480	118	75	125			
Barium	0.53	0.020	0.5000	0.01834	102	75	125			
Cadmium	0.53	0.0020	0.5000	0	105	75	125			
Chromium	0.50	0.0060	0.5000	0	99.8	75	125			
Copper	0.56	0.0060	0.5000	0	112	75	125			
Iron	0.50	0.020	0.5000	0	101	75	125			
Lead	0.52	0.0050	0.5000	0	103	75	125			
Manganese	0.50	0.0020	0.5000	0.0006300	100	75	125			
Potassium	55	1.0	50.00	3.934	101	75	125			
Selenium	0.59	0.050	0.5000	0	118	75	125			
Silver	0.099	0.0050	0.1000	0	98.6	75	125			
Uranium	0.46	0.10	0.5000	0	92.9	75	125			
Zinc	0.54	0.020	0.5000	0.02300	102	75	125			

Sample ID	1508976-004EMSD			SampType:	MSD		TestCode:	EPA Method 6010B: Dissolved Metals		
Client ID:	MW-32			Batch ID:	B28540		RunNo:	28540		
Prep Date:				Analysis Date:	8/28/2015		SeqNo:	863249		Units: mg/L
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	0.55	0.020	0.5000	0.008480	109	75	125	7.62	20	
Barium	0.49	0.020	0.5000	0.01834	94.6	75	125	7.66	20	
Cadmium	0.49	0.0020	0.5000	0	97.5	75	125	7.79	20	
Chromium	0.46	0.0060	0.5000	0	92.5	75	125	7.56	20	
Copper	0.52	0.0060	0.5000	0	104	75	125	7.82	20	
Iron	0.47	0.020	0.5000	0	93.4	75	125	7.37	20	
Lead	0.48	0.0050	0.5000	0	96.0	75	125	7.35	20	
Manganese	0.46	0.0020	0.5000	0.0006300	92.7	75	125	7.70	20	
Potassium	58	1.0	50.00	3.934	107	75	125	5.58	20	
Selenium	0.55	0.050	0.5000	0	109	75	125	7.75	20	
Silver	0.094	0.0050	0.1000	0	93.9	75	125	4.82	20	
Uranium	0.43	0.10	0.5000	0	86.0	75	125	7.64	20	
Zinc	0.50	0.020	0.5000	0.02300	94.9	75	125	7.30	20	

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1508976

15-Sep-15

Client: Western Refining Southwest, Inc.

Project: Cross Gradient Wells 8-19-15

Sample ID	MB-20922		SampType: MBLK		TestCode: EPA 6010B: Total Recoverable Metals					
Client ID:	PBW		Batch ID: 20922		RunNo: 28442					
Prep Date:	8/21/2015		Analysis Date: 8/25/2015		SeqNo: 867263		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	ND	0.020								
Barium	ND	0.020								
Cadmium	ND	0.0020								
Chromium	ND	0.0060								
Lead	ND	0.0050								
Selenium	ND	0.050								
Silver	ND	0.0050								

Sample ID	LCS-20922		SampType: LCS		TestCode: EPA 6010B: Total Recoverable Metals					
Client ID:	LCSW		Batch ID: 20922		RunNo: 28442					
Prep Date:	8/21/2015		Analysis Date: 8/25/2015		SeqNo: 867264		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	0.52	0.020	0.5000	0	104	80	120			
Barium	0.50	0.020	0.5000	0	100	80	120			
Cadmium	0.50	0.0020	0.5000	0	99.9	80	120			
Chromium	0.49	0.0060	0.5000	0	98.6	80	120			
Lead	0.50	0.0050	0.5000	0	101	80	120			
Selenium	0.50	0.050	0.5000	0	99.1	80	120			
Silver	0.10	0.0050	0.1000	0	102	80	120			

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1508976

15-Sep-15

Client: Western Refining Southwest, Inc.

Project: Cross Gradient Wells 8-19-15

Sample ID rb	SampType: MBLK			TestCode: EPA Method 8015D: Gasoline Range						
Client ID: PBW	Batch ID: C28392			RunNo: 28392						
Prep Date:	Analysis Date: 8/21/2015			SeqNo: 857645		Units: mg/L				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	0.050								
Surr: BFB	10		10.00		101	70	130			

Sample ID 2.5ug gro lcs	SampType: LCS			TestCode: EPA Method 8015D: Gasoline Range						
Client ID: LCSW	Batch ID: C28392			RunNo: 28392						
Prep Date:	Analysis Date: 8/21/2015			SeqNo: 857646		Units: mg/L				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	0.48	0.050	0.5000	0	96.6	80.6	122			
Surr: BFB	9.8		10.00		97.5	70	130			

Sample ID 1508976-001B MS	SampType: MS			TestCode: EPA Method 8015D: Gasoline Range						
Client ID: MW-1	Batch ID: C28392			RunNo: 28392						
Prep Date:	Analysis Date: 8/21/2015			SeqNo: 857648		Units: mg/L				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	0.49	0.050	0.5000	0	99.0	53.8	128			
Surr: BFB	10		10.00		99.7	70	130			

Sample ID 1508976-001B MSD	SampType: MSD			TestCode: EPA Method 8015D: Gasoline Range						
Client ID: MW-1	Batch ID: C28392			RunNo: 28392						
Prep Date:	Analysis Date: 8/21/2015			SeqNo: 857649		Units: mg/L				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	0.49	0.050	0.5000	0	98.8	53.8	128	0.162	20	
Surr: BFB	10		10.00		101	70	130	0	0	

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1508976

15-Sep-15

Client: Western Refining Southwest, Inc.

Project: Cross Gradient Wells 8-19-15

Sample ID	mb-1		SampType: MBLK		TestCode: SM2320B: Alkalinity					
Client ID:	PBW		Batch ID: R28535		RunNo: 28535					
Prep Date:			Analysis Date: 8/27/2015		SeqNo: 863066		Units: mg/L CaCO3			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Alkalinity (as CaCO3)	ND	20.00								

Sample ID	Ics-1		SampType: LCS			TestCode: SM2320B: Alkalinity				
Client ID:	LCSW		Batch ID: R28535			RunNo: 28535				
Prep Date:			Analysis Date: 8/27/2015			SeqNo: 863067		Units: mg/L CaCO3		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Alkalinity (as CaCO3)	79.48	20.00	80.00	0	99.4	90	110			

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1508976

15-Sep-15

Client: Western Refining Southwest, Inc.

Project: Cross Gradient Wells 8-19-15

Sample ID	MB-20906		SampType: MBLK		TestCode: SM2540C MOD: Total Dissolved Solids					
Client ID:	PBW		Batch ID: 20906		RunNo: 28383					
Prep Date:	8/20/2015		Analysis Date: 8/21/2015		SeqNo: 857078		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Dissolved Solids	ND	20.0								

Sample ID	LCS-20906		SampType: LCS		TestCode: SM2540C MOD: Total Dissolved Solids					
Client ID:	LCSW		Batch ID: 20906		RunNo: 28383					
Prep Date:	8/20/2015		Analysis Date: 8/21/2015		SeqNo: 857079		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Dissolved Solids	1020	20.0	1000	0	102	80	120			

Sample ID	1508976-001CMS		SampType: MS		TestCode: SM2540C MOD: Total Dissolved Solids					
Client ID:	MW-1		Batch ID: 20906		RunNo: 28383					
Prep Date:	8/20/2015		Analysis Date: 8/21/2015		SeqNo: 857081		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Dissolved Solids	2510	40.0	2000	458.0	103	80	120			D

Sample ID	1508976-001CMSD		SampType: MSD		TestCode: SM2540C MOD: Total Dissolved Solids					
Client ID:	MW-1		Batch ID: 20906		RunNo: 28383					
Prep Date:	8/20/2015		Analysis Date: 8/21/2015		SeqNo: 857082		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Dissolved Solids	2490	40.0	2000	458.0	102	80	120	0.720	5	D

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit

Sample Log-In Check List

Client Name: Western Refining Southw

Work Order Number: 1508976

RcptNo: 1

Received by/date:

AT 08/20/15

Logged By: Ashley Gallegos

8/20/2015 7:15:00 AM

AG

Completed By: Ashley Gallegos

8/20/2015 8:42:59 AM

AG

Reviewed By:

SA 08/20/15

Chain of Custody

1. Custody seals intact on sample bottles? Yes ☐ No ☐ Not Present ☒
2. Is Chain of Custody complete? Yes ☒ No ☐ Not Present ☐
3. How was the sample delivered? Courier

Log In

4. Was an attempt made to cool the samples? Yes ☒ No ☐ NA ☐
5. Were all samples received at a temperature of >0° C to 6.0°C Yes ☒ No ☐ NA ☐
6. Sample(s) in proper container(s)? Yes ☒ No ☐
7. Sufficient sample volume for indicated test(s)? Yes ☒ No ☐
8. Are samples (except VOA and ONG) properly preserved? Yes ☒ No ☐
9. Was preservative added to bottles? Yes ☐ No ☒ NA ☐
10. VOA vials have zero headspace? Yes ☒ No ☐ No VOA Vials ☐
11. Were any sample containers received broken? Yes ☐ No ☒
12. Does paperwork match bottle labels?
(Note discrepancies on chain of custody) Yes ☒ No ☐
13. Are matrices correctly identified on Chain of Custody? Yes ☒ No ☐
14. Is it clear what analyses were requested? Yes ☒ No ☐
15. Were all holding times able to be met?
(If no, notify customer for authorization.) Yes ☒ No ☐

of preserved bottles checked for pH: 12
 (<2 or >12 unless noted)
 Adjusted? NO
 Checked by: [Signature]

Special Handling (if applicable)

16. Was client notified of all discrepancies with this order? Yes ☐ No ☐ NA ☒

Person Notified:		Date	
By Whom:		Via:	☐ eMail ☐ Phone ☐ Fax ☐ In Person
Regarding:			
Client Instructions:			

17. Additional remarks:

18. Cooler Information

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	1.0	Good	Yes			



Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

September 15, 2015

Kelly Robinson

Western Refining Southwest, Inc.

#50 CR 4990

Bloomfield, NM 87413

TEL: (505) 632-4166

FAX (505) 632-3911

RE: Down Gradient Wells 8-20-15

OrderNo.: 1508A58

Dear Kelly Robinson:

Hall Environmental Analysis Laboratory received 7 sample(s) on 8/21/2015 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to www.hallenvironmental.com or the state specific web sites. In order to properly interpret your results it is imperative that you review this report in its entirety. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. When necessary, data qualifiers are provided on both the sample analysis report and the QC summary report, both sections should be reviewed. All samples are reported, as received, unless otherwise indicated. Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH and residual chlorine are qualified as being analyzed outside of the recommended holding time.

Please don't hesitate to contact HEAL for any additional information or clarifications.

ADHS Cert #AZ0682 -- NMED-DWB Cert #NM9425 -- NMED-Micro Cert #NM0190

Sincerely,

A handwritten signature in black ink, appearing to read "Andy Freeman", is written over a horizontal line.

Andy Freeman

Laboratory Manager

4901 Hawkins NE

Albuquerque, NM 87109

Analytical Report

Lab Order: 1508A58

Hall Environmental Analysis Laboratory, Inc.

Date Reported: 9/15/2015

CLIENT: Western Refining Southwest, Inc.
Project: Down Gradient Wells 8-20-15
Lab ID: 1508A58-001A

Client Sample ID: MW-11
Collection Date: 8/20/2015 7:40:00 AM
Matrix: Aqueous

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES				Analyst: DJF			
Benzene	14	1.0		µg/L	1	8/21/2015 4:44:27 PM	R28392
Toluene	ND	1.0		µg/L	1	8/21/2015 4:44:27 PM	R28392
Ethylbenzene	1.0	1.0		µg/L	1	8/21/2015 4:44:27 PM	R28392
Methyl tert-butyl ether (MTBE)	2.0	1.0		µg/L	1	8/21/2015 4:44:27 PM	R28392
1,2,4-Trimethylbenzene	390	10		µg/L	10	8/21/2015 4:16:56 PM	R28392
1,3,5-Trimethylbenzene	ND	1.0		µg/L	1	8/21/2015 4:44:27 PM	R28392
1,2-Dichloroethane (EDC)	ND	1.0		µg/L	1	8/21/2015 4:44:27 PM	R28392
1,2-Dibromoethane (EDB)	ND	1.0		µg/L	1	8/21/2015 4:44:27 PM	R28392
Naphthalene	71	2.0		µg/L	1	8/21/2015 4:44:27 PM	R28392
1-Methylnaphthalene	16	4.0		µg/L	1	8/21/2015 4:44:27 PM	R28392
2-Methylnaphthalene	18	4.0		µg/L	1	8/21/2015 4:44:27 PM	R28392
Acetone	ND	10		µg/L	1	8/21/2015 4:44:27 PM	R28392
Bromobenzene	ND	1.0		µg/L	1	8/21/2015 4:44:27 PM	R28392
Bromodichloromethane	ND	1.0		µg/L	1	8/21/2015 4:44:27 PM	R28392
Bromoform	ND	1.0		µg/L	1	8/21/2015 4:44:27 PM	R28392
Bromomethane	ND	3.0		µg/L	1	8/21/2015 4:44:27 PM	R28392
2-Butanone	ND	10		µg/L	1	8/21/2015 4:44:27 PM	R28392
Carbon disulfide	ND	10		µg/L	1	8/21/2015 4:44:27 PM	R28392
Carbon Tetrachloride	ND	1.0		µg/L	1	8/21/2015 4:44:27 PM	R28392
Chlorobenzene	ND	1.0		µg/L	1	8/21/2015 4:44:27 PM	R28392
Chloroethane	ND	2.0		µg/L	1	8/21/2015 4:44:27 PM	R28392
Chloroform	ND	1.0		µg/L	1	8/21/2015 4:44:27 PM	R28392
Chloromethane	ND	3.0		µg/L	1	8/21/2015 4:44:27 PM	R28392
2-Chlorotoluene	ND	1.0		µg/L	1	8/21/2015 4:44:27 PM	R28392
4-Chlorotoluene	ND	1.0		µg/L	1	8/21/2015 4:44:27 PM	R28392
cis-1,2-DCE	ND	1.0		µg/L	1	8/21/2015 4:44:27 PM	R28392
cis-1,3-Dichloropropene	ND	1.0		µg/L	1	8/21/2015 4:44:27 PM	R28392
1,2-Dibromo-3-chloropropane	ND	2.0		µg/L	1	8/21/2015 4:44:27 PM	R28392
Dibromochloromethane	ND	1.0		µg/L	1	8/21/2015 4:44:27 PM	R28392
Dibromomethane	ND	1.0		µg/L	1	8/21/2015 4:44:27 PM	R28392
1,2-Dichlorobenzene	ND	1.0		µg/L	1	8/21/2015 4:44:27 PM	R28392
1,3-Dichlorobenzene	ND	1.0		µg/L	1	8/21/2015 4:44:27 PM	R28392
1,4-Dichlorobenzene	ND	1.0		µg/L	1	8/21/2015 4:44:27 PM	R28392
Dichlorodifluoromethane	ND	1.0		µg/L	1	8/21/2015 4:44:27 PM	R28392
1,1-Dichloroethane	ND	1.0		µg/L	1	8/21/2015 4:44:27 PM	R28392
1,1-Dichloroethene	ND	1.0		µg/L	1	8/21/2015 4:44:27 PM	R28392
1,2-Dichloropropane	ND	1.0		µg/L	1	8/21/2015 4:44:27 PM	R28392
1,3-Dichloropropane	ND	1.0		µg/L	1	8/21/2015 4:44:27 PM	R28392
2,2-Dichloropropane	ND	2.0		µg/L	1	8/21/2015 4:44:27 PM	R28392
1,1-Dichloropropene	ND	1.0		µg/L	1	8/21/2015 4:44:27 PM	R28392
Hexachlorobutadiene	ND	1.0		µg/L	1	8/21/2015 4:44:27 PM	R28392

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
				Page 1 of 62

Analytical Report

Lab Order: 1508A58

Date Reported: 9/15/2015

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Southwest, Inc.
Project: Down Gradient Wells 8-20-15
Lab ID: 1508A58-001A

Client Sample ID: MW-11
Collection Date: 8/20/2015 7:40:00 AM
Matrix: Aqueous

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES				Analyst: DJF			
2-Hexanone	ND	10		µg/L	1	8/21/2015 4:44:27 PM	R28392
Isopropylbenzene	62	1.0		µg/L	1	8/21/2015 4:44:27 PM	R28392
4-Isopropyltoluene	5.0	1.0		µg/L	1	8/21/2015 4:44:27 PM	R28392
4-Methyl-2-pentanone	ND	10		µg/L	1	8/21/2015 4:44:27 PM	R28392
Methylene Chloride	ND	3.0		µg/L	1	8/21/2015 4:44:27 PM	R28392
n-Butylbenzene	ND	3.0		µg/L	1	8/21/2015 4:44:27 PM	R28392
n-Propylbenzene	54	1.0		µg/L	1	8/21/2015 4:44:27 PM	R28392
sec-Butylbenzene	12	1.0		µg/L	1	8/21/2015 4:44:27 PM	R28392
Styrene	ND	1.0		µg/L	1	8/21/2015 4:44:27 PM	R28392
tert-Butylbenzene	2.5	1.0		µg/L	1	8/21/2015 4:44:27 PM	R28392
1,1,1,2-Tetrachloroethane	ND	1.0		µg/L	1	8/21/2015 4:44:27 PM	R28392
1,1,2,2-Tetrachloroethane	ND	2.0		µg/L	1	8/21/2015 4:44:27 PM	R28392
Tetrachloroethene (PCE)	ND	1.0		µg/L	1	8/21/2015 4:44:27 PM	R28392
trans-1,2-DCE	ND	1.0		µg/L	1	8/21/2015 4:44:27 PM	R28392
trans-1,3-Dichloropropene	ND	1.0		µg/L	1	8/21/2015 4:44:27 PM	R28392
1,2,3-Trichlorobenzene	ND	1.0		µg/L	1	8/21/2015 4:44:27 PM	R28392
1,2,4-Trichlorobenzene	ND	1.0		µg/L	1	8/21/2015 4:44:27 PM	R28392
1,1,1-Trichloroethane	ND	1.0		µg/L	1	8/21/2015 4:44:27 PM	R28392
1,1,2-Trichloroethane	ND	1.0		µg/L	1	8/21/2015 4:44:27 PM	R28392
Trichloroethene (TCE)	ND	1.0		µg/L	1	8/21/2015 4:44:27 PM	R28392
Trichlorofluoromethane	ND	1.0		µg/L	1	8/21/2015 4:44:27 PM	R28392
1,2,3-Trichloropropane	ND	2.0		µg/L	1	8/21/2015 4:44:27 PM	R28392
Vinyl chloride	ND	1.0		µg/L	1	8/21/2015 4:44:27 PM	R28392
Xylenes, Total	ND	1.5		µg/L	1	8/21/2015 4:44:27 PM	R28392
Surr: 1,2-Dichloroethane-d4	104	70-130		%REC	1	8/21/2015 4:44:27 PM	R28392
Surr: 4-Bromofluorobenzene	104	70-130		%REC	1	8/21/2015 4:44:27 PM	R28392
Surr: Dibromofluoromethane	108	70-130		%REC	1	8/21/2015 4:44:27 PM	R28392
Surr: Toluene-d8	105	70-130		%REC	1	8/21/2015 4:44:27 PM	R28392

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order: 1508A58

Date Reported: 9/15/2015

CLIENT: Western Refining Southwest, Inc.
Project: Down Gradient Wells 8-20-15
Lab ID: 1508A58-001B

Client Sample ID: MW-11
Collection Date: 8/20/2015 7:40:00 AM
Matrix: Aqueous

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D: GASOLINE RANGE							Analyst: DJF
Gasoline Range Organics (GRO)	2.4	0.050		mg/L	1	8/21/2015 4:44:27 PM	C28392
Surr: BFB	104	70-130		%REC	1	8/21/2015 4:44:27 PM	C28392

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
				Page 3 of 62

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order: 1508A58

Date Reported: 9/15/2015

CLIENT: Western Refining Southwest, Inc.
Project: Down Gradient Wells 8-20-15
Lab ID: 1508A58-001C

Client Sample ID: MW-11
Collection Date: 8/20/2015 7:40:00 AM
Matrix: Aqueous

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D: DIESEL RANGE							Analyst: TOM
Diesel Range Organics (DRO)	1.5	0.20		mg/L	1	8/21/2015 6:36:24 PM	20920
Motor Oil Range Organics (MRO)	ND	2.5		mg/L	1	8/21/2015 6:36:24 PM	20920
Surr: DNOP	98.6	84.6-165		%REC	1	8/21/2015 6:36:24 PM	20920

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order: 1508A58

Date Reported: 9/15/2015

CLIENT: Western Refining Southwest, Inc.
Project: Down Gradient Wells 8-20-15
Lab ID: 1508A58-001D

Client Sample ID: MW-11
Collection Date: 8/20/2015 7:40:00 AM
Matrix: Aqueous

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
CARBON DIOXIDE							Analyst: JRR
Total Carbon Dioxide	1000	1.0	H	mg CO2/L	1	8/27/2015 1:32:47 PM	R28535
EPA METHOD 300.0: ANIONS							Analyst: LGT
Fluoride	0.35	0.10		mg/L	1	8/21/2015 3:47:10 PM	R28397
Chloride	78	10		mg/L	20	8/21/2015 3:59:34 PM	R28397
Nitrogen, Nitrite (As N)	ND	0.10		mg/L	1	8/21/2015 3:47:10 PM	R28397
Bromide	0.15	0.10		mg/L	1	8/21/2015 3:47:10 PM	R28397
Nitrogen, Nitrate (As N)	0.15	0.10		mg/L	1	8/21/2015 3:47:10 PM	R28397
Phosphorus, Orthophosphate (As P)	ND	0.50		mg/L	1	8/21/2015 3:47:10 PM	R28397
Sulfate	5.7	0.50		mg/L	1	8/21/2015 3:47:10 PM	R28397
SM2510B: SPECIFIC CONDUCTANCE							Analyst: JRR
Conductivity	2000	0.010		µmhos/cm	1	8/27/2015 1:32:47 PM	R28535
SM2320B: ALKALINITY							Analyst: JRR
Bicarbonate (As CaCO3)	1038	20.00		mg/L CaCO3	1	8/27/2015 1:32:47 PM	R28535
Carbonate (As CaCO3)	ND	2.000		mg/L CaCO3	1	8/27/2015 1:32:47 PM	R28535
Total Alkalinity (as CaCO3)	1038	20.00		mg/L CaCO3	1	8/27/2015 1:32:47 PM	R28535
SM2540C MOD: TOTAL DISSOLVED SOLIDS							Analyst: KS
Total Dissolved Solids	1360	100	*D	mg/L	1	8/26/2015 10:21:00 AM	20939

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order: 1508A58

Date Reported: 9/15/2015

CLIENT: Western Refining Southwest, Inc.
Project: Down Gradient Wells 8-20-15
Lab ID: 1508A58-001E

Client Sample ID: MW-11
Collection Date: 8/20/2015 7:40:00 AM
Matrix: Aqueous

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 7470: MERCURY							Analyst: JLF
Mercury	ND	0.00020		mg/L	1	9/1/2015 3:09:43 PM	21063
EPA METHOD 6010B: DISSOLVED METALS							Analyst: MED
Arsenic	ND	0.020		mg/L	1	8/28/2015 1:41:08 PM	A28540
Barium	0.85	0.020		mg/L	1	8/28/2015 1:41:08 PM	A28540
Cadmium	ND	0.0020		mg/L	1	8/28/2015 1:41:08 PM	A28540
Calcium	96	1.0		mg/L	1	8/28/2015 1:41:08 PM	A28540
Chromium	ND	0.0060		mg/L	1	8/28/2015 1:41:08 PM	A28540
Copper	ND	0.0060		mg/L	1	8/28/2015 1:41:08 PM	A28540
Iron	9.6	0.20		mg/L	10	8/28/2015 2:47:29 PM	A28540
Lead	0.0060	0.0050		mg/L	1	8/28/2015 1:41:08 PM	A28540
Magnesium	22	1.0		mg/L	1	8/28/2015 1:41:08 PM	A28540
Manganese	1.5	0.010		mg/L	5	8/28/2015 2:45:43 PM	A28540
Potassium	1.5	1.0		mg/L	1	8/28/2015 1:41:08 PM	A28540
Selenium	ND	0.050		mg/L	1	8/28/2015 1:41:08 PM	A28540
Silver	ND	0.0050		mg/L	1	8/28/2015 1:41:08 PM	A28540
Sodium	390	5.0		mg/L	5	8/28/2015 2:45:43 PM	A28540
Uranium	ND	0.10		mg/L	1	8/28/2015 1:41:08 PM	A28540
Zinc	ND	0.020		mg/L	1	8/28/2015 1:41:08 PM	A28540

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
				Page 6 of 62

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order: 1508A58

Date Reported: 9/15/2015

CLIENT: Western Refining Southwest, Inc.
Project: Down Gradient Wells 8-20-15
Lab ID: 1508A58-001F

Client Sample ID: MW-11
Collection Date: 8/20/2015 7:40:00 AM
Matrix: Aqueous

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 7470: MERCURY							Analyst: JLF
Mercury	ND	0.00020		mg/L	1	9/1/2015 3:11:43 PM	21063
EPA 6010B: TOTAL RECOVERABLE METALS							Analyst: MED
Arsenic	0.035	0.020		mg/L	1	8/25/2015 1:42:32 PM	20924
Barium	0.92	0.10		mg/L	5	8/25/2015 2:16:00 PM	20924
Cadmium	ND	0.0020		mg/L	1	8/25/2015 1:42:32 PM	20924
Chromium	ND	0.0060		mg/L	1	8/25/2015 1:42:32 PM	20924
Lead	0.0075	0.0050		mg/L	1	8/25/2015 1:42:32 PM	20924
Selenium	ND	0.050		mg/L	1	8/25/2015 1:42:32 PM	20924
Silver	ND	0.0050		mg/L	1	8/25/2015 1:42:32 PM	20924

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
				Page 7 of 62

Analytical Report

Lab Order: 1508A58

Hall Environmental Analysis Laboratory, Inc.

Date Reported: 9/15/2015

CLIENT: Western Refining Southwest, Inc.
Project: Down Gradient Wells 8-20-15
Lab ID: 1508A58-002A

Client Sample ID: MW-12
Collection Date: 8/20/2015 8:20:00 AM
Matrix: Aqueous

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES				Analyst: DJF			
Benzene	ND	1.0		µg/L	1	8/21/2015 5:39:33 PM	R28392
Toluene	ND	1.0		µg/L	1	8/21/2015 5:39:33 PM	R28392
Ethylbenzene	ND	1.0		µg/L	1	8/21/2015 5:39:33 PM	R28392
Methyl tert-butyl ether (MTBE)	ND	1.0		µg/L	1	8/21/2015 5:39:33 PM	R28392
1,2,4-Trimethylbenzene	ND	1.0		µg/L	1	8/21/2015 5:39:33 PM	R28392
1,3,5-Trimethylbenzene	ND	1.0		µg/L	1	8/21/2015 5:39:33 PM	R28392
1,2-Dichloroethane (EDC)	ND	1.0		µg/L	1	8/21/2015 5:39:33 PM	R28392
1,2-Dibromoethane (EDB)	ND	1.0		µg/L	1	8/21/2015 5:39:33 PM	R28392
Naphthalene	ND	2.0		µg/L	1	8/21/2015 5:39:33 PM	R28392
1-Methylnaphthalene	ND	4.0		µg/L	1	8/21/2015 5:39:33 PM	R28392
2-Methylnaphthalene	ND	4.0		µg/L	1	8/21/2015 5:39:33 PM	R28392
Acetone	ND	10		µg/L	1	8/21/2015 5:39:33 PM	R28392
Bromobenzene	ND	1.0		µg/L	1	8/21/2015 5:39:33 PM	R28392
Bromodichloromethane	ND	1.0		µg/L	1	8/21/2015 5:39:33 PM	R28392
Bromoform	ND	1.0		µg/L	1	8/21/2015 5:39:33 PM	R28392
Bromomethane	ND	3.0		µg/L	1	8/21/2015 5:39:33 PM	R28392
2-Butanone	ND	10		µg/L	1	8/21/2015 5:39:33 PM	R28392
Carbon disulfide	ND	10		µg/L	1	8/21/2015 5:39:33 PM	R28392
Carbon Tetrachloride	ND	1.0		µg/L	1	8/21/2015 5:39:33 PM	R28392
Chlorobenzene	ND	1.0		µg/L	1	8/21/2015 5:39:33 PM	R28392
Chloroethane	ND	2.0		µg/L	1	8/21/2015 5:39:33 PM	R28392
Chloroform	ND	1.0		µg/L	1	8/21/2015 5:39:33 PM	R28392
Chloromethane	ND	3.0		µg/L	1	8/21/2015 5:39:33 PM	R28392
2-Chlorotoluene	ND	1.0		µg/L	1	8/21/2015 5:39:33 PM	R28392
4-Chlorotoluene	ND	1.0		µg/L	1	8/21/2015 5:39:33 PM	R28392
cis-1,2-DCE	ND	1.0		µg/L	1	8/21/2015 5:39:33 PM	R28392
cis-1,3-Dichloropropene	ND	1.0		µg/L	1	8/21/2015 5:39:33 PM	R28392
1,2-Dibromo-3-chloropropane	ND	2.0		µg/L	1	8/21/2015 5:39:33 PM	R28392
Dibromochloromethane	ND	1.0		µg/L	1	8/21/2015 5:39:33 PM	R28392
Dibromomethane	ND	1.0		µg/L	1	8/21/2015 5:39:33 PM	R28392
1,2-Dichlorobenzene	ND	1.0		µg/L	1	8/21/2015 5:39:33 PM	R28392
1,3-Dichlorobenzene	ND	1.0		µg/L	1	8/21/2015 5:39:33 PM	R28392
1,4-Dichlorobenzene	ND	1.0		µg/L	1	8/21/2015 5:39:33 PM	R28392
Dichlorodifluoromethane	ND	1.0		µg/L	1	8/21/2015 5:39:33 PM	R28392
1,1-Dichloroethane	ND	1.0		µg/L	1	8/21/2015 5:39:33 PM	R28392
1,1-Dichloroethene	ND	1.0		µg/L	1	8/21/2015 5:39:33 PM	R28392
1,2-Dichloropropane	ND	1.0		µg/L	1	8/21/2015 5:39:33 PM	R28392
1,3-Dichloropropane	ND	1.0		µg/L	1	8/21/2015 5:39:33 PM	R28392
2,2-Dichloropropane	ND	2.0		µg/L	1	8/21/2015 5:39:33 PM	R28392
1,1-Dichloropropene	ND	1.0		µg/L	1	8/21/2015 5:39:33 PM	R28392
Hexachlorobutadiene	ND	1.0		µg/L	1	8/21/2015 5:39:33 PM	R28392

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
				Page 8 of 62

Analytical ReportLab Order: **1508A58****Hall Environmental Analysis Laboratory, Inc.**Date Reported: **9/15/2015**

CLIENT: Western Refining Southwest, Inc.
Project: Down Gradient Wells 8-20-15
Lab ID: 1508A58-002A

Client Sample ID: MW-12
Collection Date: 8/20/2015 8:20:00 AM
Matrix: Aqueous

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES				Analyst: DJF			
2-Hexanone	ND	10		µg/L	1	8/21/2015 5:39:33 PM	R28392
Isopropylbenzene	ND	1.0		µg/L	1	8/21/2015 5:39:33 PM	R28392
4-Isopropyltoluene	ND	1.0		µg/L	1	8/21/2015 5:39:33 PM	R28392
4-Methyl-2-pentanone	ND	10		µg/L	1	8/21/2015 5:39:33 PM	R28392
Methylene Chloride	ND	3.0		µg/L	1	8/21/2015 5:39:33 PM	R28392
n-Butylbenzene	ND	3.0		µg/L	1	8/21/2015 5:39:33 PM	R28392
n-Propylbenzene	ND	1.0		µg/L	1	8/21/2015 5:39:33 PM	R28392
sec-Butylbenzene	ND	1.0		µg/L	1	8/21/2015 5:39:33 PM	R28392
Styrene	ND	1.0		µg/L	1	8/21/2015 5:39:33 PM	R28392
tert-Butylbenzene	ND	1.0		µg/L	1	8/21/2015 5:39:33 PM	R28392
1,1,1,2-Tetrachloroethane	ND	1.0		µg/L	1	8/21/2015 5:39:33 PM	R28392
1,1,2,2-Tetrachloroethane	ND	2.0		µg/L	1	8/21/2015 5:39:33 PM	R28392
Tetrachloroethene (PCE)	ND	1.0		µg/L	1	8/21/2015 5:39:33 PM	R28392
trans-1,2-DCE	ND	1.0		µg/L	1	8/21/2015 5:39:33 PM	R28392
trans-1,3-Dichloropropene	ND	1.0		µg/L	1	8/21/2015 5:39:33 PM	R28392
1,2,3-Trichlorobenzene	ND	1.0		µg/L	1	8/21/2015 5:39:33 PM	R28392
1,2,4-Trichlorobenzene	ND	1.0		µg/L	1	8/21/2015 5:39:33 PM	R28392
1,1,1-Trichloroethane	ND	1.0		µg/L	1	8/21/2015 5:39:33 PM	R28392
1,1,2-Trichloroethane	ND	1.0		µg/L	1	8/21/2015 5:39:33 PM	R28392
Trichloroethene (TCE)	ND	1.0		µg/L	1	8/21/2015 5:39:33 PM	R28392
Trichlorofluoromethane	ND	1.0		µg/L	1	8/21/2015 5:39:33 PM	R28392
1,2,3-Trichloropropane	ND	2.0		µg/L	1	8/21/2015 5:39:33 PM	R28392
Vinyl chloride	ND	1.0		µg/L	1	8/21/2015 5:39:33 PM	R28392
Xylenes, Total	ND	1.5		µg/L	1	8/21/2015 5:39:33 PM	R28392
Surr: 1,2-Dichloroethane-d4	102	70-130		%REC	1	8/21/2015 5:39:33 PM	R28392
Surr: 4-Bromofluorobenzene	110	70-130		%REC	1	8/21/2015 5:39:33 PM	R28392
Surr: Dibromofluoromethane	112	70-130		%REC	1	8/21/2015 5:39:33 PM	R28392
Surr: Toluene-d8	97.5	70-130		%REC	1	8/21/2015 5:39:33 PM	R28392

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
				Page 9 of 62

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order: 1508A58

Date Reported: 9/15/2015

CLIENT: Western Refining Southwest, Inc.
Project: Down Gradient Wells 8-20-15
Lab ID: 1508A58-002B

Client Sample ID: MW-12
Collection Date: 8/20/2015 8:20:00 AM
Matrix: Aqueous

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D: GASOLINE RANGE							Analyst: DJF
Gasoline Range Organics (GRO)	ND	0.050		mg/L	1	8/21/2015 5:39:33 PM	C28392
Surr: BFB	100	70-130		%REC	1	8/21/2015 5:39:33 PM	C28392

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order: 1508A58

Date Reported: 9/15/2015

CLIENT: Western Refining Southwest, Inc.
Project: Down Gradient Wells 8-20-15
Lab ID: 1508A58-002C

Client Sample ID: MW-12
Collection Date: 8/20/2015 8:20:00 AM
Matrix: Aqueous

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D: DIESEL RANGE							Analyst: TOM
Diesel Range Organics (DRO)	ND	0.20		mg/L	1	8/21/2015 6:57:45 PM	20920
Motor Oil Range Organics (MRO)	ND	2.5		mg/L	1	8/21/2015 6:57:45 PM	20920
Surr: DNOP	104	84.6-165		%REC	1	8/21/2015 6:57:45 PM	20920

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order: 1508A58

Date Reported: 9/15/2015

CLIENT: Western Refining Southwest, Inc.
Project: Down Gradient Wells 8-20-15
Lab ID: 1508A58-002D

Client Sample ID: MW-12
Collection Date: 8/20/2015 8:20:00 AM
Matrix: Aqueous

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
CARBON DIOXIDE							Analyst: JRR
Total Carbon Dioxide	130	1.0	H	mg CO2/L	1	8/27/2015 2:09:25 PM	R28535
EPA METHOD 300.0: ANIONS							Analyst: LGT
Fluoride	0.63	0.10		mg/L	1	8/21/2015 4:11:58 PM	R28397
Chloride	4.0	0.50		mg/L	1	8/21/2015 4:11:58 PM	R28397
Nitrogen, Nitrite (As N)	ND	0.10		mg/L	1	8/21/2015 4:11:58 PM	R28397
Bromide	ND	0.10		mg/L	1	8/21/2015 4:11:58 PM	R28397
Nitrogen, Nitrate (As N)	0.11	0.10		mg/L	1	8/21/2015 4:11:58 PM	R28397
Phosphorus, Orthophosphate (As P)	ND	0.50		mg/L	1	8/21/2015 4:11:58 PM	R28397
Sulfate	79	10		mg/L	20	8/21/2015 4:24:23 PM	R28397
SM2510B: SPECIFIC CONDUCTANCE							Analyst: JRR
Conductivity	460	0.010		µmhos/cm	1	8/27/2015 2:09:25 PM	R28535
SM2320B: ALKALINITY							Analyst: JRR
Bicarbonate (As CaCO3)	148.4	20.00		mg/L CaCO3	1	8/27/2015 2:09:25 PM	R28535
Carbonate (As CaCO3)	ND	2.000		mg/L CaCO3	1	8/27/2015 2:09:25 PM	R28535
Total Alkalinity (as CaCO3)	148.4	20.00		mg/L CaCO3	1	8/27/2015 2:09:25 PM	R28535
SM2540C MOD: TOTAL DISSOLVED SOLIDS							Analyst: KS
Total Dissolved Solids	304	40.0	D	mg/L	1	8/26/2015 10:21:00 AM	20939

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order: 1508A58

Date Reported: 9/15/2015

CLIENT: Western Refining Southwest, Inc.
Project: Down Gradient Wells 8-20-15
Lab ID: 1508A58-002E

Client Sample ID: MW-12
Collection Date: 8/20/2015 8:20:00 AM
Matrix: Aqueous

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 7470: MERCURY							Analyst: JLF
Mercury	ND	0.00020		mg/L	1	9/1/2015 3:13:44 PM	21063
EPA METHOD 6010B: DISSOLVED METALS							Analyst: MED
Arsenic	ND	0.020		mg/L	1	8/28/2015 1:42:43 PM	A28540
Barium	0.047	0.020		mg/L	1	8/28/2015 1:42:43 PM	A28540
Cadmium	ND	0.0020		mg/L	1	8/28/2015 1:42:43 PM	A28540
Calcium	48	1.0		mg/L	1	8/28/2015 1:42:43 PM	A28540
Chromium	ND	0.0060		mg/L	1	8/28/2015 1:42:43 PM	A28540
Copper	ND	0.0060		mg/L	1	8/28/2015 1:42:43 PM	A28540
Iron	ND	0.020		mg/L	1	8/28/2015 1:42:43 PM	A28540
Lead	ND	0.0050		mg/L	1	8/28/2015 1:42:43 PM	A28540
Magnesium	6.9	1.0		mg/L	1	8/28/2015 1:42:43 PM	A28540
Manganese	0.030	0.0020		mg/L	1	8/28/2015 1:42:43 PM	A28540
Potassium	ND	1.0		mg/L	1	8/28/2015 1:42:43 PM	A28540
Selenium	ND	0.050		mg/L	1	8/28/2015 1:42:43 PM	A28540
Silver	ND	0.0050		mg/L	1	8/28/2015 1:42:43 PM	A28540
Sodium	31	1.0		mg/L	1	8/28/2015 1:42:43 PM	A28540
Uranium	ND	0.10		mg/L	1	8/28/2015 1:42:43 PM	A28540
Zinc	ND	0.020		mg/L	1	8/28/2015 1:42:43 PM	A28540

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order: 1508A58

Date Reported: 9/15/2015

CLIENT: Western Refining Southwest, Inc.
Project: Down Gradient Wells 8-20-15
Lab ID: 1508A58-002F

Client Sample ID: MW-12
Collection Date: 8/20/2015 8:20:00 AM
Matrix: Aqueous

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 7470: MERCURY							Analyst: JLF
Mercury	ND	0.00020		mg/L	1	9/1/2015 3:15:46 PM	21063
EPA 6010B: TOTAL RECOVERABLE METALS							Analyst: MED
Arsenic	ND	0.020		mg/L	1	8/25/2015 1:53:03 PM	20924
Barium	0.13	0.020		mg/L	1	8/25/2015 1:53:03 PM	20924
Cadmium	ND	0.0020		mg/L	1	8/25/2015 1:53:03 PM	20924
Chromium	0.34	0.0060		mg/L	1	8/25/2015 1:53:03 PM	20924
Lead	0.0064	0.0050		mg/L	1	8/25/2015 1:53:03 PM	20924
Selenium	ND	0.050		mg/L	1	8/25/2015 1:53:03 PM	20924
Silver	ND	0.0050		mg/L	1	8/25/2015 1:53:03 PM	20924

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Analytical Report

Lab Order: 1508A58

Hall Environmental Analysis Laboratory, Inc.

Date Reported: 9/15/2015

CLIENT: Western Refining Southwest, Inc.
Project: Down Gradient Wells 8-20-15
Lab ID: 1508A58-003A

Client Sample ID: MW-34
Collection Date: 8/20/2015 8:45:00 AM
Matrix: Aqueous

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES				Analyst: DJF			
Benzene	ND	1.0		µg/L	1	8/21/2015 6:07:04 PM	R28392
Toluene	ND	1.0		µg/L	1	8/21/2015 6:07:04 PM	R28392
Ethylbenzene	ND	1.0		µg/L	1	8/21/2015 6:07:04 PM	R28392
Methyl tert-butyl ether (MTBE)	ND	1.0		µg/L	1	8/21/2015 6:07:04 PM	R28392
1,2,4-Trimethylbenzene	ND	1.0		µg/L	1	8/21/2015 6:07:04 PM	R28392
1,3,5-Trimethylbenzene	ND	1.0		µg/L	1	8/21/2015 6:07:04 PM	R28392
1,2-Dichloroethane (EDC)	ND	1.0		µg/L	1	8/21/2015 6:07:04 PM	R28392
1,2-Dibromoethane (EDB)	ND	1.0		µg/L	1	8/21/2015 6:07:04 PM	R28392
Naphthalene	ND	2.0		µg/L	1	8/21/2015 6:07:04 PM	R28392
1-Methylnaphthalene	ND	4.0		µg/L	1	8/21/2015 6:07:04 PM	R28392
2-Methylnaphthalene	ND	4.0		µg/L	1	8/21/2015 6:07:04 PM	R28392
Acetone	ND	10		µg/L	1	8/21/2015 6:07:04 PM	R28392
Bromobenzene	ND	1.0		µg/L	1	8/21/2015 6:07:04 PM	R28392
Bromodichloromethane	ND	1.0		µg/L	1	8/21/2015 6:07:04 PM	R28392
Bromoform	ND	1.0		µg/L	1	8/21/2015 6:07:04 PM	R28392
Bromomethane	ND	3.0		µg/L	1	8/21/2015 6:07:04 PM	R28392
2-Butanone	ND	10		µg/L	1	8/21/2015 6:07:04 PM	R28392
Carbon disulfide	ND	10		µg/L	1	8/21/2015 6:07:04 PM	R28392
Carbon Tetrachloride	ND	1.0		µg/L	1	8/21/2015 6:07:04 PM	R28392
Chlorobenzene	ND	1.0		µg/L	1	8/21/2015 6:07:04 PM	R28392
Chloroethane	ND	2.0		µg/L	1	8/21/2015 6:07:04 PM	R28392
Chloroform	ND	1.0		µg/L	1	8/21/2015 6:07:04 PM	R28392
Chloromethane	ND	3.0		µg/L	1	8/21/2015 6:07:04 PM	R28392
2-Chlorotoluene	ND	1.0		µg/L	1	8/21/2015 6:07:04 PM	R28392
4-Chlorotoluene	ND	1.0		µg/L	1	8/21/2015 6:07:04 PM	R28392
cis-1,2-DCE	ND	1.0		µg/L	1	8/21/2015 6:07:04 PM	R28392
cis-1,3-Dichloropropene	ND	1.0		µg/L	1	8/21/2015 6:07:04 PM	R28392
1,2-Dibromo-3-chloropropane	ND	2.0		µg/L	1	8/21/2015 6:07:04 PM	R28392
Dibromochloromethane	ND	1.0		µg/L	1	8/21/2015 6:07:04 PM	R28392
Dibromomethane	ND	1.0		µg/L	1	8/21/2015 6:07:04 PM	R28392
1,2-Dichlorobenzene	ND	1.0		µg/L	1	8/21/2015 6:07:04 PM	R28392
1,3-Dichlorobenzene	ND	1.0		µg/L	1	8/21/2015 6:07:04 PM	R28392
1,4-Dichlorobenzene	ND	1.0		µg/L	1	8/21/2015 6:07:04 PM	R28392
Dichlorodifluoromethane	ND	1.0		µg/L	1	8/21/2015 6:07:04 PM	R28392
1,1-Dichloroethane	ND	1.0		µg/L	1	8/21/2015 6:07:04 PM	R28392
1,1-Dichloroethene	ND	1.0		µg/L	1	8/21/2015 6:07:04 PM	R28392
1,2-Dichloropropane	ND	1.0		µg/L	1	8/21/2015 6:07:04 PM	R28392
1,3-Dichloropropane	ND	1.0		µg/L	1	8/21/2015 6:07:04 PM	R28392
2,2-Dichloropropane	ND	2.0		µg/L	1	8/21/2015 6:07:04 PM	R28392
1,1-Dichloropropene	ND	1.0		µg/L	1	8/21/2015 6:07:04 PM	R28392
Hexachlorobutadiene	ND	1.0		µg/L	1	8/21/2015 6:07:04 PM	R28392

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
				Page 15 of 62

Analytical Report

Lab Order: 1508A58

Hall Environmental Analysis Laboratory, Inc.

Date Reported: 9/15/2015

CLIENT: Western Refining Southwest, Inc.
Project: Down Gradient Wells 8-20-15
Lab ID: 1508A58-003A

Client Sample ID: MW-34
Collection Date: 8/20/2015 8:45:00 AM
Matrix: Aqueous

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES				Analyst: DJF			
2-Hexanone	ND	10		µg/L	1	8/21/2015 6:07:04 PM	R28392
Isopropylbenzene	4.6	1.0		µg/L	1	8/21/2015 6:07:04 PM	R28392
4-Isopropyltoluene	ND	1.0		µg/L	1	8/21/2015 6:07:04 PM	R28392
4-Methyl-2-pentanone	ND	10		µg/L	1	8/21/2015 6:07:04 PM	R28392
Methylene Chloride	ND	3.0		µg/L	1	8/21/2015 6:07:04 PM	R28392
n-Butylbenzene	ND	3.0		µg/L	1	8/21/2015 6:07:04 PM	R28392
n-Propylbenzene	2.8	1.0		µg/L	1	8/21/2015 6:07:04 PM	R28392
sec-Butylbenzene	4.5	1.0		µg/L	1	8/21/2015 6:07:04 PM	R28392
Styrene	ND	1.0		µg/L	1	8/21/2015 6:07:04 PM	R28392
tert-Butylbenzene	1.7	1.0		µg/L	1	8/21/2015 6:07:04 PM	R28392
1,1,1,2-Tetrachloroethane	ND	1.0		µg/L	1	8/21/2015 6:07:04 PM	R28392
1,1,2,2-Tetrachloroethane	ND	2.0		µg/L	1	8/21/2015 6:07:04 PM	R28392
Tetrachloroethene (PCE)	ND	1.0		µg/L	1	8/21/2015 6:07:04 PM	R28392
trans-1,2-DCE	ND	1.0		µg/L	1	8/21/2015 6:07:04 PM	R28392
trans-1,3-Dichloropropene	ND	1.0		µg/L	1	8/21/2015 6:07:04 PM	R28392
1,2,3-Trichlorobenzene	ND	1.0		µg/L	1	8/21/2015 6:07:04 PM	R28392
1,2,4-Trichlorobenzene	ND	1.0		µg/L	1	8/21/2015 6:07:04 PM	R28392
1,1,1-Trichloroethane	ND	1.0		µg/L	1	8/21/2015 6:07:04 PM	R28392
1,1,2-Trichloroethane	ND	1.0		µg/L	1	8/21/2015 6:07:04 PM	R28392
Trichloroethene (TCE)	ND	1.0		µg/L	1	8/21/2015 6:07:04 PM	R28392
Trichlorofluoromethane	ND	1.0		µg/L	1	8/21/2015 6:07:04 PM	R28392
1,2,3-Trichloropropane	ND	2.0		µg/L	1	8/21/2015 6:07:04 PM	R28392
Vinyl chloride	ND	1.0		µg/L	1	8/21/2015 6:07:04 PM	R28392
Xylenes, Total	ND	1.5		µg/L	1	8/21/2015 6:07:04 PM	R28392
Surr: 1,2-Dichloroethane-d4	98.3	70-130		%REC	1	8/21/2015 6:07:04 PM	R28392
Surr: 4-Bromofluorobenzene	94.9	70-130		%REC	1	8/21/2015 6:07:04 PM	R28392
Surr: Dibromofluoromethane	109	70-130		%REC	1	8/21/2015 6:07:04 PM	R28392
Surr: Toluene-d8	104	70-130		%REC	1	8/21/2015 6:07:04 PM	R28392

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
				Page 16 of 62

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order: 1508A58

Date Reported: 9/15/2015

CLIENT: Western Refining Southwest, Inc.
Project: Down Gradient Wells 8-20-15
Lab ID: 1508A58-003B

Client Sample ID: MW-34
Collection Date: 8/20/2015 8:45:00 AM
Matrix: Aqueous

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D: GASOLINE RANGE							Analyst: DJF
Gasoline Range Organics (GRO)	1.3	0.050		mg/L	1	8/21/2015 6:07:04 PM	C28392
Surr: BFB	97.6	70-130		%REC	1	8/21/2015 6:07:04 PM	C28392

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order: 1508A58

Date Reported: 9/15/2015

CLIENT: Western Refining Southwest, Inc.
Project: Down Gradient Wells 8-20-15
Lab ID: 1508A58-003C

Client Sample ID: MW-34
Collection Date: 8/20/2015 8:45:00 AM
Matrix: Aqueous

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D: DIESEL RANGE							Analyst: TOM
Diesel Range Organics (DRO)	0.56	0.20		mg/L	1	8/21/2015 7:19:05 PM	20920
Motor Oil Range Organics (MRO)	ND	2.5		mg/L	1	8/21/2015 7:19:05 PM	20920
Surr: DNOP	103	84.6-165		%REC	1	8/21/2015 7:19:05 PM	20920

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order: 1508A58

Date Reported: 9/15/2015

CLIENT: Western Refining Southwest, Inc.
Project: Down Gradient Wells 8-20-15
Lab ID: 1508A58-003D

Client Sample ID: MW-34
Collection Date: 8/20/2015 8:45:00 AM
Matrix: Aqueous

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
CARBON DIOXIDE							Analyst: JRR
Total Carbon Dioxide	820	1.0	H	mg CO2/L	1	8/27/2015 2:18:41 PM	R28535
EPA METHOD 300.0: ANIONS							Analyst: LGT
Fluoride	0.56	0.10		mg/L	1	8/21/2015 4:36:47 PM	R28397
Chloride	190	10		mg/L	20	8/21/2015 4:49:12 PM	R28397
Nitrogen, Nitrite (As N)	ND	0.10		mg/L	1	8/21/2015 4:36:47 PM	R28397
Bromide	0.70	0.10		mg/L	1	8/21/2015 4:36:47 PM	R28397
Nitrogen, Nitrate (As N)	0.27	0.10		mg/L	1	8/21/2015 4:36:47 PM	R28397
Phosphorus, Orthophosphate (As P)	ND	0.50		mg/L	1	8/21/2015 4:36:47 PM	R28397
Sulfate	23	0.50		mg/L	1	8/21/2015 4:36:47 PM	R28397
SM2510B: SPECIFIC CONDUCTANCE							Analyst: JRR
Conductivity	2100	0.010		µmhos/cm	1	8/27/2015 2:18:41 PM	R28535
SM2320B: ALKALINITY							Analyst: JRR
Bicarbonate (As CaCO3)	876.0	20.00		mg/L CaCO3	1	8/27/2015 2:18:41 PM	R28535
Carbonate (As CaCO3)	ND	2.000		mg/L CaCO3	1	8/27/2015 2:18:41 PM	R28535
Total Alkalinity (as CaCO3)	876.0	20.00		mg/L CaCO3	1	8/27/2015 2:18:41 PM	R28535
SM2540C MOD: TOTAL DISSOLVED SOLIDS							Analyst: KS
Total Dissolved Solids	1340	40.0	*D	mg/L	1	8/26/2015 10:21:00 AM	20939

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order: 1508A58

Date Reported: 9/15/2015

CLIENT: Western Refining Southwest, Inc.
Project: Down Gradient Wells 8-20-15
Lab ID: 1508A58-003E

Client Sample ID: MW-34
Collection Date: 8/20/2015 8:45:00 AM
Matrix: Aqueous

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 7470: MERCURY							Analyst: JLF
Mercury	ND	0.00020		mg/L	1	9/1/2015 3:17:49 PM	21063
EPA METHOD 6010B: DISSOLVED METALS							Analyst: MED
Arsenic	ND	0.020		mg/L	1	8/28/2015 1:54:22 PM	A28540
Barium	0.73	0.020		mg/L	1	8/28/2015 1:54:22 PM	A28540
Cadmium	ND	0.0020		mg/L	1	8/28/2015 1:54:22 PM	A28540
Calcium	93	1.0		mg/L	1	8/28/2015 1:54:22 PM	A28540
Chromium	ND	0.0060		mg/L	1	8/28/2015 1:54:22 PM	A28540
Copper	ND	0.0060		mg/L	1	8/28/2015 1:54:22 PM	A28540
Iron	2.8	0.10		mg/L	5	8/28/2015 2:49:21 PM	A28540
Lead	0.0050	0.0050		mg/L	1	8/28/2015 1:54:22 PM	A28540
Magnesium	16	1.0		mg/L	1	8/28/2015 1:54:22 PM	A28540
Manganese	3.2	0.010		mg/L	5	8/28/2015 2:49:21 PM	A28540
Potassium	1.3	1.0		mg/L	1	8/28/2015 1:54:22 PM	A28540
Selenium	ND	0.050		mg/L	1	8/28/2015 1:54:22 PM	A28540
Silver	ND	0.0050		mg/L	1	8/28/2015 1:54:22 PM	A28540
Sodium	380	5.0		mg/L	5	8/28/2015 2:49:21 PM	A28540
Uranium	ND	0.10		mg/L	1	8/28/2015 1:54:22 PM	A28540
Zinc	ND	0.020		mg/L	1	8/28/2015 1:54:22 PM	A28540

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order: 1508A58

Date Reported: 9/15/2015

CLIENT: Western Refining Southwest, Inc.
Project: Down Gradient Wells 8-20-15
Lab ID: 1508A58-003F

Client Sample ID: MW-34
Collection Date: 8/20/2015 8:45:00 AM
Matrix: Aqueous

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 7470: MERCURY							Analyst: JLF
Mercury	ND	0.00020		mg/L	1	9/1/2015 3:19:52 PM	21063
EPA 6010B: TOTAL RECOVERABLE METALS							Analyst: MED
Arsenic	ND	0.020		mg/L	1	8/25/2015 1:54:50 PM	20924
Barium	0.78	0.020		mg/L	1	8/25/2015 1:54:50 PM	20924
Cadmium	ND	0.0020		mg/L	1	8/25/2015 1:54:50 PM	20924
Chromium	ND	0.0060		mg/L	1	8/25/2015 1:54:50 PM	20924
Lead	ND	0.0050		mg/L	1	8/25/2015 1:54:50 PM	20924
Selenium	ND	0.050		mg/L	1	8/25/2015 1:54:50 PM	20924
Silver	ND	0.0050		mg/L	1	8/25/2015 1:54:50 PM	20924

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Analytical Report

Lab Order: 1508A58

Hall Environmental Analysis Laboratory, Inc.

Date Reported: 9/15/2015

CLIENT: Western Refining Southwest, Inc.
Project: Down Gradient Wells 8-20-15
Lab ID: 1508A58-004A

Client Sample ID: MW-35
Collection Date: 8/20/2015 8:55:00 AM
Matrix: Aqueous

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES				Analyst: DJF			
Benzene	ND	1.0		µg/L	1	8/21/2015 6:34:37 PM	R28392
Toluene	ND	1.0		µg/L	1	8/21/2015 6:34:37 PM	R28392
Ethylbenzene	ND	1.0		µg/L	1	8/21/2015 6:34:37 PM	R28392
Methyl tert-butyl ether (MTBE)	ND	1.0		µg/L	1	8/21/2015 6:34:37 PM	R28392
1,2,4-Trimethylbenzene	19	1.0		µg/L	1	8/21/2015 6:34:37 PM	R28392
1,3,5-Trimethylbenzene	ND	1.0		µg/L	1	8/21/2015 6:34:37 PM	R28392
1,2-Dichloroethane (EDC)	ND	1.0		µg/L	1	8/21/2015 6:34:37 PM	R28392
1,2-Dibromoethane (EDB)	ND	1.0		µg/L	1	8/21/2015 6:34:37 PM	R28392
Naphthalene	ND	2.0		µg/L	1	8/21/2015 6:34:37 PM	R28392
1-Methylnaphthalene	ND	4.0		µg/L	1	8/21/2015 6:34:37 PM	R28392
2-Methylnaphthalene	ND	4.0		µg/L	1	8/21/2015 6:34:37 PM	R28392
Acetone	ND	10		µg/L	1	8/21/2015 6:34:37 PM	R28392
Bromobenzene	ND	1.0		µg/L	1	8/21/2015 6:34:37 PM	R28392
Bromodichloromethane	ND	1.0		µg/L	1	8/21/2015 6:34:37 PM	R28392
Bromoform	ND	1.0		µg/L	1	8/21/2015 6:34:37 PM	R28392
Bromomethane	ND	3.0		µg/L	1	8/21/2015 6:34:37 PM	R28392
2-Butanone	ND	10		µg/L	1	8/21/2015 6:34:37 PM	R28392
Carbon disulfide	ND	10		µg/L	1	8/21/2015 6:34:37 PM	R28392
Carbon Tetrachloride	ND	1.0		µg/L	1	8/21/2015 6:34:37 PM	R28392
Chlorobenzene	ND	1.0		µg/L	1	8/21/2015 6:34:37 PM	R28392
Chloroethane	ND	2.0		µg/L	1	8/21/2015 6:34:37 PM	R28392
Chloroform	ND	1.0		µg/L	1	8/21/2015 6:34:37 PM	R28392
Chloromethane	ND	3.0		µg/L	1	8/21/2015 6:34:37 PM	R28392
2-Chlorotoluene	ND	1.0		µg/L	1	8/21/2015 6:34:37 PM	R28392
4-Chlorotoluene	ND	1.0		µg/L	1	8/21/2015 6:34:37 PM	R28392
cis-1,2-DCE	ND	1.0		µg/L	1	8/21/2015 6:34:37 PM	R28392
cis-1,3-Dichloropropene	ND	1.0		µg/L	1	8/21/2015 6:34:37 PM	R28392
1,2-Dibromo-3-chloropropane	ND	2.0		µg/L	1	8/21/2015 6:34:37 PM	R28392
Dibromochloromethane	ND	1.0		µg/L	1	8/21/2015 6:34:37 PM	R28392
Dibromomethane	ND	1.0		µg/L	1	8/21/2015 6:34:37 PM	R28392
1,2-Dichlorobenzene	ND	1.0		µg/L	1	8/21/2015 6:34:37 PM	R28392
1,3-Dichlorobenzene	ND	1.0		µg/L	1	8/21/2015 6:34:37 PM	R28392
1,4-Dichlorobenzene	ND	1.0		µg/L	1	8/21/2015 6:34:37 PM	R28392
Dichlorodifluoromethane	ND	1.0		µg/L	1	8/21/2015 6:34:37 PM	R28392
1,1-Dichloroethane	ND	1.0		µg/L	1	8/21/2015 6:34:37 PM	R28392
1,1-Dichloroethene	ND	1.0		µg/L	1	8/21/2015 6:34:37 PM	R28392
1,2-Dichloropropane	ND	1.0		µg/L	1	8/21/2015 6:34:37 PM	R28392
1,3-Dichloropropane	ND	1.0		µg/L	1	8/21/2015 6:34:37 PM	R28392
2,2-Dichloropropane	ND	2.0		µg/L	1	8/21/2015 6:34:37 PM	R28392
1,1-Dichloropropene	ND	1.0		µg/L	1	8/21/2015 6:34:37 PM	R28392
Hexachlorobutadiene	ND	1.0		µg/L	1	8/21/2015 6:34:37 PM	R28392

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Analytical ReportLab Order: **1508A58****Hall Environmental Analysis Laboratory, Inc.**Date Reported: **9/15/2015**

CLIENT: Western Refining Southwest, Inc.
Project: Down Gradient Wells 8-20-15
Lab ID: 1508A58-004A

Client Sample ID: MW-35
Collection Date: 8/20/2015 8:55:00 AM
Matrix: Aqueous

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES				Analyst: DJF			
2-Hexanone	ND	10		µg/L	1	8/21/2015 6:34:37 PM	R28392
Isopropylbenzene	1.5	1.0		µg/L	1	8/21/2015 6:34:37 PM	R28392
4-Isopropyltoluene	1.1	1.0		µg/L	1	8/21/2015 6:34:37 PM	R28392
4-Methyl-2-pentanone	ND	10		µg/L	1	8/21/2015 6:34:37 PM	R28392
Methylene Chloride	ND	3.0		µg/L	1	8/21/2015 6:34:37 PM	R28392
n-Butylbenzene	ND	3.0		µg/L	1	8/21/2015 6:34:37 PM	R28392
n-Propylbenzene	ND	1.0		µg/L	1	8/21/2015 6:34:37 PM	R28392
sec-Butylbenzene	1.1	1.0		µg/L	1	8/21/2015 6:34:37 PM	R28392
Styrene	ND	1.0		µg/L	1	8/21/2015 6:34:37 PM	R28392
tert-Butylbenzene	ND	1.0		µg/L	1	8/21/2015 6:34:37 PM	R28392
1,1,1,2-Tetrachloroethane	ND	1.0		µg/L	1	8/21/2015 6:34:37 PM	R28392
1,1,2,2-Tetrachloroethane	ND	2.0		µg/L	1	8/21/2015 6:34:37 PM	R28392
Tetrachloroethene (PCE)	ND	1.0		µg/L	1	8/21/2015 6:34:37 PM	R28392
trans-1,2-DCE	ND	1.0		µg/L	1	8/21/2015 6:34:37 PM	R28392
trans-1,3-Dichloropropene	ND	1.0		µg/L	1	8/21/2015 6:34:37 PM	R28392
1,2,3-Trichlorobenzene	ND	1.0		µg/L	1	8/21/2015 6:34:37 PM	R28392
1,2,4-Trichlorobenzene	ND	1.0		µg/L	1	8/21/2015 6:34:37 PM	R28392
1,1,1-Trichloroethane	ND	1.0		µg/L	1	8/21/2015 6:34:37 PM	R28392
1,1,2-Trichloroethane	ND	1.0		µg/L	1	8/21/2015 6:34:37 PM	R28392
Trichloroethene (TCE)	ND	1.0		µg/L	1	8/21/2015 6:34:37 PM	R28392
Trichlorofluoromethane	ND	1.0		µg/L	1	8/21/2015 6:34:37 PM	R28392
1,2,3-Trichloropropane	ND	2.0		µg/L	1	8/21/2015 6:34:37 PM	R28392
Vinyl chloride	ND	1.0		µg/L	1	8/21/2015 6:34:37 PM	R28392
Xylenes, Total	ND	1.5		µg/L	1	8/21/2015 6:34:37 PM	R28392
Surr: 1,2-Dichloroethane-d4	101	70-130		%REC	1	8/21/2015 6:34:37 PM	R28392
Surr: 4-Bromofluorobenzene	103	70-130		%REC	1	8/21/2015 6:34:37 PM	R28392
Surr: Dibromofluoromethane	106	70-130		%REC	1	8/21/2015 6:34:37 PM	R28392
Surr: Toluene-d8	98.2	70-130		%REC	1	8/21/2015 6:34:37 PM	R28392

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
				Page 23 of 62

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order: 1508A58

Date Reported: 9/15/2015

CLIENT: Western Refining Southwest, Inc.
Project: Down Gradient Wells 8-20-15
Lab ID: 1508A58-004B

Client Sample ID: MW-35
Collection Date: 8/20/2015 8:55:00 AM
Matrix: Aqueous

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D: GASOLINE RANGE							Analyst: DJF
Gasoline Range Organics (GRO)	0.54	0.050		mg/L	1	8/21/2015 6:34:37 PM	C28392
Surr: BFB	104	70-130		%REC	1	8/21/2015 6:34:37 PM	C28392

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order: 1508A58

Date Reported: 9/15/2015

CLIENT: Western Refining Southwest, Inc.
Project: Down Gradient Wells 8-20-15
Lab ID: 1508A58-004C

Client Sample ID: MW-35
Collection Date: 8/20/2015 8:55:00 AM
Matrix: Aqueous

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D: DIESEL RANGE							Analyst: TOM
Diesel Range Organics (DRO)	0.38	0.20		mg/L	1	8/21/2015 7:40:18 PM	20920
Motor Oil Range Organics (MRO)	ND	2.5		mg/L	1	8/21/2015 7:40:18 PM	20920
Surr: DNOP	106	84.6-165		%REC	1	8/21/2015 7:40:18 PM	20920

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Analytical ReportLab Order: **1508A58****Hall Environmental Analysis Laboratory, Inc.**Date Reported: **9/15/2015**

CLIENT: Western Refining Southwest, Inc.
Project: Down Gradient Wells 8-20-15
Lab ID: 1508A58-004D

Client Sample ID: MW-35
Collection Date: 8/20/2015 8:55:00 AM
Matrix: Aqueous

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
CARBON DIOXIDE							Analyst: JRR
Total Carbon Dioxide	790	1.0	H	mg CO2/L	1	8/27/2015 2:49:01 PM	R28535
EPA METHOD 300.0: ANIONS							Analyst: LGT
Fluoride	0.55	0.10		mg/L	1	8/21/2015 5:01:36 PM	R28397
Chloride	180	10		mg/L	20	8/21/2015 5:14:00 PM	R28397
Nitrogen, Nitrite (As N)	ND	0.10		mg/L	1	8/21/2015 5:01:36 PM	R28397
Bromide	0.74	0.10		mg/L	1	8/21/2015 5:01:36 PM	R28397
Nitrogen, Nitrate (As N)	0.25	0.10		mg/L	1	8/21/2015 5:01:36 PM	R28397
Phosphorus, Orthophosphate (As P)	ND	0.50		mg/L	1	8/21/2015 5:01:36 PM	R28397
Sulfate	11	0.50		mg/L	1	8/21/2015 5:01:36 PM	R28397
SM2510B: SPECIFIC CONDUCTANCE							Analyst: JRR
Conductivity	2000	0.010		µmhos/cm	1	8/27/2015 2:49:01 PM	R28535
SM2320B: ALKALINITY							Analyst: JRR
Bicarbonate (As CaCO3)	845.0	20.00		mg/L CaCO3	1	8/27/2015 2:49:01 PM	R28535
Carbonate (As CaCO3)	ND	2.000		mg/L CaCO3	1	8/27/2015 2:49:01 PM	R28535
Total Alkalinity (as CaCO3)	845.0	20.00		mg/L CaCO3	1	8/27/2015 2:49:01 PM	R28535
SM2540C MOD: TOTAL DISSOLVED SOLIDS							Analyst: KS
Total Dissolved Solids	1230	100	*D	mg/L	1	8/26/2015 10:21:00 AM	20939

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order: 1508A58

Date Reported: 9/15/2015

CLIENT: Western Refining Southwest, Inc.
Project: Down Gradient Wells 8-20-15
Lab ID: 1508A58-004E

Client Sample ID: MW-35
Collection Date: 8/20/2015 8:55:00 AM
Matrix: Aqueous

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 7470: MERCURY							Analyst: JLF
Mercury	ND	0.00020		mg/L	1	9/1/2015 3:26:09 PM	21063
EPA METHOD 6010B: DISSOLVED METALS							Analyst: MED
Arsenic	0.038	0.020		mg/L	1	8/28/2015 1:56:06 PM	A28540
Barium	1.6	0.10		mg/L	5	8/28/2015 2:53:10 PM	A28540
Cadmium	ND	0.0020		mg/L	1	8/28/2015 1:56:06 PM	A28540
Calcium	110	5.0		mg/L	5	8/28/2015 2:53:10 PM	A28540
Chromium	ND	0.0060		mg/L	1	8/28/2015 1:56:06 PM	A28540
Copper	ND	0.0060		mg/L	1	8/28/2015 1:56:06 PM	A28540
Iron	0.10	0.020		mg/L	1	8/28/2015 1:56:06 PM	A28540
Lead	ND	0.0050		mg/L	1	8/28/2015 1:56:06 PM	A28540
Magnesium	21	1.0		mg/L	1	8/28/2015 1:56:06 PM	A28540
Manganese	2.4	0.010		mg/L	5	8/28/2015 2:53:10 PM	A28540
Potassium	2.5	1.0		mg/L	1	8/28/2015 1:56:06 PM	A28540
Selenium	ND	0.050		mg/L	1	8/28/2015 1:56:06 PM	A28540
Silver	ND	0.0050		mg/L	1	8/28/2015 1:56:06 PM	A28540
Sodium	340	5.0		mg/L	5	8/28/2015 2:53:10 PM	A28540
Uranium	ND	0.10		mg/L	1	8/28/2015 1:56:06 PM	A28540
Zinc	0.023	0.020		mg/L	1	8/28/2015 1:56:06 PM	A28540

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order: 1508A58

Date Reported: 9/15/2015

CLIENT: Western Refining Southwest, Inc.
Project: Down Gradient Wells 8-20-15
Lab ID: 1508A58-004F

Client Sample ID: MW-35
Collection Date: 8/20/2015 8:55:00 AM
Matrix: Aqueous

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 7470: MERCURY							Analyst: JLF
Mercury	ND	0.00020		mg/L	1	9/1/2015 3:28:13 PM	21063
EPA 6010B: TOTAL RECOVERABLE METALS							Analyst: MED
Arsenic	0.11	0.020		mg/L	1	8/25/2015 1:56:31 PM	20924
Barium	1.6	0.10		mg/L	5	8/25/2015 2:21:13 PM	20924
Cadmium	ND	0.0020		mg/L	1	8/25/2015 1:56:31 PM	20924
Chromium	ND	0.0060		mg/L	1	8/25/2015 1:56:31 PM	20924
Lead	ND	0.0050		mg/L	1	8/25/2015 1:56:31 PM	20924
Selenium	ND	0.050		mg/L	1	8/25/2015 1:56:31 PM	20924
Silver	ND	0.0050		mg/L	1	8/25/2015 1:56:31 PM	20924

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Analytical Report

Lab Order: 1508A58

Hall Environmental Analysis Laboratory, Inc.

Date Reported: 9/15/2015

CLIENT: Western Refining Southwest, Inc.
Project: Down Gradient Wells 8-20-15
Lab ID: 1508A58-005A

Client Sample ID: MW-37
Collection Date: 8/20/2015 9:10:00 AM
Matrix: Aqueous

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES				Analyst: DJF			
Benzene	ND	1.0		µg/L	1	8/21/2015 7:02:07 PM	R28392
Toluene	ND	1.0		µg/L	1	8/21/2015 7:02:07 PM	R28392
Ethylbenzene	ND	1.0		µg/L	1	8/21/2015 7:02:07 PM	R28392
Methyl tert-butyl ether (MTBE)	ND	1.0		µg/L	1	8/21/2015 7:02:07 PM	R28392
1,2,4-Trimethylbenzene	ND	1.0		µg/L	1	8/21/2015 7:02:07 PM	R28392
1,3,5-Trimethylbenzene	ND	1.0		µg/L	1	8/21/2015 7:02:07 PM	R28392
1,2-Dichloroethane (EDC)	ND	1.0		µg/L	1	8/21/2015 7:02:07 PM	R28392
1,2-Dibromoethane (EDB)	ND	1.0		µg/L	1	8/21/2015 7:02:07 PM	R28392
Naphthalene	ND	2.0		µg/L	1	8/21/2015 7:02:07 PM	R28392
1-Methylnaphthalene	ND	4.0		µg/L	1	8/21/2015 7:02:07 PM	R28392
2-Methylnaphthalene	ND	4.0		µg/L	1	8/21/2015 7:02:07 PM	R28392
Acetone	ND	10		µg/L	1	8/21/2015 7:02:07 PM	R28392
Bromobenzene	ND	1.0		µg/L	1	8/21/2015 7:02:07 PM	R28392
Bromodichloromethane	ND	1.0		µg/L	1	8/21/2015 7:02:07 PM	R28392
Bromoform	ND	1.0		µg/L	1	8/21/2015 7:02:07 PM	R28392
Bromomethane	ND	3.0		µg/L	1	8/21/2015 7:02:07 PM	R28392
2-Butanone	ND	10		µg/L	1	8/21/2015 7:02:07 PM	R28392
Carbon disulfide	ND	10		µg/L	1	8/21/2015 7:02:07 PM	R28392
Carbon Tetrachloride	ND	1.0		µg/L	1	8/21/2015 7:02:07 PM	R28392
Chlorobenzene	ND	1.0		µg/L	1	8/21/2015 7:02:07 PM	R28392
Chloroethane	ND	2.0		µg/L	1	8/21/2015 7:02:07 PM	R28392
Chloroform	ND	1.0		µg/L	1	8/21/2015 7:02:07 PM	R28392
Chloromethane	ND	3.0		µg/L	1	8/21/2015 7:02:07 PM	R28392
2-Chlorotoluene	ND	1.0		µg/L	1	8/21/2015 7:02:07 PM	R28392
4-Chlorotoluene	ND	1.0		µg/L	1	8/21/2015 7:02:07 PM	R28392
cis-1,2-DCE	ND	1.0		µg/L	1	8/21/2015 7:02:07 PM	R28392
cis-1,3-Dichloropropene	ND	1.0		µg/L	1	8/21/2015 7:02:07 PM	R28392
1,2-Dibromo-3-chloropropane	ND	2.0		µg/L	1	8/21/2015 7:02:07 PM	R28392
Dibromochloromethane	ND	1.0		µg/L	1	8/21/2015 7:02:07 PM	R28392
Dibromomethane	ND	1.0		µg/L	1	8/21/2015 7:02:07 PM	R28392
1,2-Dichlorobenzene	ND	1.0		µg/L	1	8/21/2015 7:02:07 PM	R28392
1,3-Dichlorobenzene	ND	1.0		µg/L	1	8/21/2015 7:02:07 PM	R28392
1,4-Dichlorobenzene	ND	1.0		µg/L	1	8/21/2015 7:02:07 PM	R28392
Dichlorodifluoromethane	ND	1.0		µg/L	1	8/21/2015 7:02:07 PM	R28392
1,1-Dichloroethane	ND	1.0		µg/L	1	8/21/2015 7:02:07 PM	R28392
1,1-Dichloroethene	ND	1.0		µg/L	1	8/21/2015 7:02:07 PM	R28392
1,2-Dichloropropane	ND	1.0		µg/L	1	8/21/2015 7:02:07 PM	R28392
1,3-Dichloropropane	ND	1.0		µg/L	1	8/21/2015 7:02:07 PM	R28392
2,2-Dichloropropane	ND	2.0		µg/L	1	8/21/2015 7:02:07 PM	R28392
1,1-Dichloropropene	ND	1.0		µg/L	1	8/21/2015 7:02:07 PM	R28392
Hexachlorobutadiene	ND	1.0		µg/L	1	8/21/2015 7:02:07 PM	R28392

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Analytical Report

Lab Order: 1508A58

Date Reported: 9/15/2015

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Southwest, Inc.
Project: Down Gradient Wells 8-20-15
Lab ID: 1508A58-005A

Client Sample ID: MW-37
Collection Date: 8/20/2015 9:10:00 AM
Matrix: Aqueous

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES				Analyst: DJF			
2-Hexanone	ND	10		µg/L	1	8/21/2015 7:02:07 PM	R28392
Isopropylbenzene	ND	1.0		µg/L	1	8/21/2015 7:02:07 PM	R28392
4-Isopropyltoluene	ND	1.0		µg/L	1	8/21/2015 7:02:07 PM	R28392
4-Methyl-2-pentanone	ND	10		µg/L	1	8/21/2015 7:02:07 PM	R28392
Methylene Chloride	ND	3.0		µg/L	1	8/21/2015 7:02:07 PM	R28392
n-Butylbenzene	ND	3.0		µg/L	1	8/21/2015 7:02:07 PM	R28392
n-Propylbenzene	ND	1.0		µg/L	1	8/21/2015 7:02:07 PM	R28392
sec-Butylbenzene	ND	1.0		µg/L	1	8/21/2015 7:02:07 PM	R28392
Styrene	ND	1.0		µg/L	1	8/21/2015 7:02:07 PM	R28392
tert-Butylbenzene	ND	1.0		µg/L	1	8/21/2015 7:02:07 PM	R28392
1,1,1,2-Tetrachloroethane	ND	1.0		µg/L	1	8/21/2015 7:02:07 PM	R28392
1,1,2,2-Tetrachloroethane	ND	2.0		µg/L	1	8/21/2015 7:02:07 PM	R28392
Tetrachloroethene (PCE)	ND	1.0		µg/L	1	8/21/2015 7:02:07 PM	R28392
trans-1,2-DCE	ND	1.0		µg/L	1	8/21/2015 7:02:07 PM	R28392
trans-1,3-Dichloropropene	ND	1.0		µg/L	1	8/21/2015 7:02:07 PM	R28392
1,2,3-Trichlorobenzene	ND	1.0		µg/L	1	8/21/2015 7:02:07 PM	R28392
1,2,4-Trichlorobenzene	ND	1.0		µg/L	1	8/21/2015 7:02:07 PM	R28392
1,1,1-Trichloroethane	ND	1.0		µg/L	1	8/21/2015 7:02:07 PM	R28392
1,1,2-Trichloroethane	ND	1.0		µg/L	1	8/21/2015 7:02:07 PM	R28392
Trichloroethene (TCE)	ND	1.0		µg/L	1	8/21/2015 7:02:07 PM	R28392
Trichlorofluoromethane	ND	1.0		µg/L	1	8/21/2015 7:02:07 PM	R28392
1,2,3-Trichloropropane	ND	2.0		µg/L	1	8/21/2015 7:02:07 PM	R28392
Vinyl chloride	ND	1.0		µg/L	1	8/21/2015 7:02:07 PM	R28392
Xylenes, Total	ND	1.5		µg/L	1	8/21/2015 7:02:07 PM	R28392
Surr: 1,2-Dichloroethane-d4	100	70-130		%REC	1	8/21/2015 7:02:07 PM	R28392
Surr: 4-Bromofluorobenzene	101	70-130		%REC	1	8/21/2015 7:02:07 PM	R28392
Surr: Dibromofluoromethane	110	70-130		%REC	1	8/21/2015 7:02:07 PM	R28392
Surr: Toluene-d8	98.0	70-130		%REC	1	8/21/2015 7:02:07 PM	R28392

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
				Page 30 of 62

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order: 1508A58

Date Reported: 9/15/2015

CLIENT: Western Refining Southwest, Inc.
Project: Down Gradient Wells 8-20-15
Lab ID: 1508A58-005B

Client Sample ID: MW-37
Collection Date: 8/20/2015 9:10:00 AM
Matrix: Aqueous

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D: GASOLINE RANGE							Analyst: DJF
Gasoline Range Organics (GRO)	ND	0.050		mg/L	1	8/21/2015 7:02:07 PM	C28392
Surr: BFB	96.5	70-130		%REC	1	8/21/2015 7:02:07 PM	C28392

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order: 1508A58

Date Reported: 9/15/2015

CLIENT: Western Refining Southwest, Inc.
Project: Down Gradient Wells 8-20-15
Lab ID: 1508A58-005C

Client Sample ID: MW-37
Collection Date: 8/20/2015 9:10:00 AM
Matrix: Aqueous

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D: DIESEL RANGE							Analyst: TOM
Diesel Range Organics (DRO)	ND	0.20		mg/L	1	8/21/2015 8:01:49 PM	20920
Motor Oil Range Organics (MRO)	ND	2.5		mg/L	1	8/21/2015 8:01:49 PM	20920
Surr: DNOP	106	84.6-165		%REC	1	8/21/2015 8:01:49 PM	20920

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Analytical Report

Lab Order: 1508A58

Date Reported: 9/15/2015

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Southwest, Inc.
Project: Down Gradient Wells 8-20-15
Lab ID: 1508A58-005D

Client Sample ID: MW-37
Collection Date: 8/20/2015 9:10:00 AM
Matrix: Aqueous

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
CARBON DIOXIDE							Analyst: JRR
Total Carbon Dioxide	770	1.0	H	mg CO2/L	1	8/27/2015 3:18:59 PM	R28535
EPA METHOD 300.0: ANIONS							Analyst: LGT
Fluoride	0.59	0.10		mg/L	1	8/21/2015 5:51:13 PM	R28397
Chloride	220	10		mg/L	20	8/21/2015 6:03:38 PM	R28397
Nitrogen, Nitrite (As N)	ND	0.10		mg/L	1	8/21/2015 5:51:13 PM	R28397
Bromide	1.2	0.10		mg/L	1	8/21/2015 5:51:13 PM	R28397
Nitrogen, Nitrate (As N)	ND	0.10		mg/L	1	8/21/2015 5:51:13 PM	R28397
Phosphorus, Orthophosphate (As P)	ND	0.50		mg/L	1	8/21/2015 5:51:13 PM	R28397
Sulfate	110	10		mg/L	20	8/21/2015 6:03:38 PM	R28397
SM2510B: SPECIFIC CONDUCTANCE							Analyst: JRR
Conductivity	2300	0.010		µmhos/cm	1	8/27/2015 3:18:59 PM	R28535
SM2320B: ALKALINITY							Analyst: JRR
Bicarbonate (As CaCO3)	855.5	20.00		mg/L CaCO3	1	8/27/2015 3:18:59 PM	R28535
Carbonate (As CaCO3)	ND	2.000		mg/L CaCO3	1	8/27/2015 3:18:59 PM	R28535
Total Alkalinity (as CaCO3)	855.5	20.00		mg/L CaCO3	1	8/27/2015 3:18:59 PM	R28535
SM2540C MOD: TOTAL DISSOLVED SOLIDS							Analyst: KS
Total Dissolved Solids	1430	100	*D	mg/L	1	8/26/2015 10:21:00 AM	20939

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order: 1508A58

Date Reported: 9/15/2015

CLIENT: Western Refining Southwest, Inc.
Project: Down Gradient Wells 8-20-15
Lab ID: 1508A58-005E

Client Sample ID: MW-37
Collection Date: 8/20/2015 9:10:00 AM
Matrix: Aqueous

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 7470: MERCURY							Analyst: JLF
Mercury	ND	0.00020		mg/L	1	9/1/2015 3:30:17 PM	21063
EPA METHOD 6010B: DISSOLVED METALS							Analyst: MED
Arsenic	ND	0.020		mg/L	1	8/28/2015 1:58:03 PM	A28540
Barium	0.40	0.020		mg/L	1	8/28/2015 1:58:03 PM	A28540
Cadmium	ND	0.0020		mg/L	1	8/28/2015 1:58:03 PM	A28540
Calcium	92	1.0		mg/L	1	8/28/2015 1:58:03 PM	A28540
Chromium	ND	0.0060		mg/L	1	8/28/2015 1:58:03 PM	A28540
Copper	ND	0.0060		mg/L	1	8/28/2015 1:58:03 PM	A28540
Iron	ND	0.020		mg/L	1	8/28/2015 1:58:03 PM	A28540
Lead	ND	0.0050		mg/L	1	8/28/2015 1:58:03 PM	A28540
Magnesium	21	1.0		mg/L	1	8/28/2015 1:58:03 PM	A28540
Manganese	1.0	0.010		mg/L	5	8/28/2015 2:56:54 PM	A28540
Potassium	2.8	1.0		mg/L	1	8/28/2015 1:58:03 PM	A28540
Selenium	ND	0.050		mg/L	1	8/28/2015 1:58:03 PM	A28540
Silver	ND	0.0050		mg/L	1	8/28/2015 1:58:03 PM	A28540
Sodium	420	5.0		mg/L	5	8/28/2015 2:56:54 PM	A28540
Uranium	ND	0.10		mg/L	1	8/28/2015 1:58:03 PM	A28540
Zinc	ND	0.020		mg/L	1	8/28/2015 1:58:03 PM	A28540

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order: 1508A58

Date Reported: 9/15/2015

CLIENT: Western Refining Southwest, Inc.
Project: Down Gradient Wells 8-20-15
Lab ID: 1508A58-005F

Client Sample ID: MW-37
Collection Date: 8/20/2015 9:10:00 AM
Matrix: Aqueous

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 7470: MERCURY							Analyst: JLF
Mercury	ND	0.00020		mg/L	1	9/1/2015 3:32:22 PM	21063
EPA 6010B: TOTAL RECOVERABLE METALS							Analyst: MED
Arsenic	ND	0.020		mg/L	1	8/25/2015 1:58:08 PM	20924
Barium	0.42	0.020		mg/L	1	8/25/2015 1:58:08 PM	20924
Cadmium	ND	0.0020		mg/L	1	8/25/2015 1:58:08 PM	20924
Chromium	ND	0.0060		mg/L	1	8/25/2015 1:58:08 PM	20924
Lead	ND	0.0050		mg/L	1	8/25/2015 1:58:08 PM	20924
Selenium	ND	0.050		mg/L	1	8/25/2015 1:58:08 PM	20924
Silver	ND	0.0050		mg/L	1	8/25/2015 1:58:08 PM	20924

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Analytical Report

Lab Order: 1508A58

Hall Environmental Analysis Laboratory, Inc.

Date Reported: 9/15/2015

CLIENT: Western Refining Southwest, Inc.
Project: Down Gradient Wells 8-20-15
Lab ID: 1508A58-006A

Client Sample ID: MW-38
Collection Date: 8/20/2015 9:30:00 AM
Matrix: Aqueous

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES				Analyst: DJF			
Benzene	ND	1.0		µg/L	1	8/21/2015 7:29:34 PM	R28392
Toluene	ND	1.0		µg/L	1	8/21/2015 7:29:34 PM	R28392
Ethylbenzene	ND	1.0		µg/L	1	8/21/2015 7:29:34 PM	R28392
Methyl tert-butyl ether (MTBE)	ND	1.0		µg/L	1	8/21/2015 7:29:34 PM	R28392
1,2,4-Trimethylbenzene	ND	1.0		µg/L	1	8/21/2015 7:29:34 PM	R28392
1,3,5-Trimethylbenzene	ND	1.0		µg/L	1	8/21/2015 7:29:34 PM	R28392
1,2-Dichloroethane (EDC)	ND	1.0		µg/L	1	8/21/2015 7:29:34 PM	R28392
1,2-Dibromoethane (EDB)	ND	1.0		µg/L	1	8/21/2015 7:29:34 PM	R28392
Naphthalene	ND	2.0		µg/L	1	8/21/2015 7:29:34 PM	R28392
1-Methylnaphthalene	ND	4.0		µg/L	1	8/21/2015 7:29:34 PM	R28392
2-Methylnaphthalene	ND	4.0		µg/L	1	8/21/2015 7:29:34 PM	R28392
Acetone	ND	10		µg/L	1	8/21/2015 7:29:34 PM	R28392
Bromobenzene	ND	1.0		µg/L	1	8/21/2015 7:29:34 PM	R28392
Bromodichloromethane	ND	1.0		µg/L	1	8/21/2015 7:29:34 PM	R28392
Bromoform	ND	1.0		µg/L	1	8/21/2015 7:29:34 PM	R28392
Bromomethane	ND	3.0		µg/L	1	8/21/2015 7:29:34 PM	R28392
2-Butanone	ND	10		µg/L	1	8/21/2015 7:29:34 PM	R28392
Carbon disulfide	ND	10		µg/L	1	8/21/2015 7:29:34 PM	R28392
Carbon Tetrachloride	ND	1.0		µg/L	1	8/21/2015 7:29:34 PM	R28392
Chlorobenzene	ND	1.0		µg/L	1	8/21/2015 7:29:34 PM	R28392
Chloroethane	ND	2.0		µg/L	1	8/21/2015 7:29:34 PM	R28392
Chloroform	ND	1.0		µg/L	1	8/21/2015 7:29:34 PM	R28392
Chloromethane	ND	3.0		µg/L	1	8/21/2015 7:29:34 PM	R28392
2-Chlorotoluene	ND	1.0		µg/L	1	8/21/2015 7:29:34 PM	R28392
4-Chlorotoluene	ND	1.0		µg/L	1	8/21/2015 7:29:34 PM	R28392
cis-1,2-DCE	ND	1.0		µg/L	1	8/21/2015 7:29:34 PM	R28392
cis-1,3-Dichloropropene	ND	1.0		µg/L	1	8/21/2015 7:29:34 PM	R28392
1,2-Dibromo-3-chloropropane	ND	2.0		µg/L	1	8/21/2015 7:29:34 PM	R28392
Dibromochloromethane	ND	1.0		µg/L	1	8/21/2015 7:29:34 PM	R28392
Dibromomethane	ND	1.0		µg/L	1	8/21/2015 7:29:34 PM	R28392
1,2-Dichlorobenzene	ND	1.0		µg/L	1	8/21/2015 7:29:34 PM	R28392
1,3-Dichlorobenzene	ND	1.0		µg/L	1	8/21/2015 7:29:34 PM	R28392
1,4-Dichlorobenzene	ND	1.0		µg/L	1	8/21/2015 7:29:34 PM	R28392
Dichlorodifluoromethane	ND	1.0		µg/L	1	8/21/2015 7:29:34 PM	R28392
1,1-Dichloroethane	ND	1.0		µg/L	1	8/21/2015 7:29:34 PM	R28392
1,1-Dichloroethene	ND	1.0		µg/L	1	8/21/2015 7:29:34 PM	R28392
1,2-Dichloropropane	ND	1.0		µg/L	1	8/21/2015 7:29:34 PM	R28392
1,3-Dichloropropane	ND	1.0		µg/L	1	8/21/2015 7:29:34 PM	R28392
2,2-Dichloropropane	ND	2.0		µg/L	1	8/21/2015 7:29:34 PM	R28392
1,1-Dichloropropene	ND	1.0		µg/L	1	8/21/2015 7:29:34 PM	R28392
Hexachlorobutadiene	ND	1.0		µg/L	1	8/21/2015 7:29:34 PM	R28392

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
				Page 36 of 62

Analytical Report

Lab Order: 1508A58

Hall Environmental Analysis Laboratory, Inc.

Date Reported: 9/15/2015

CLIENT: Western Refining Southwest, Inc.
Project: Down Gradient Wells 8-20-15
Lab ID: 1508A58-006A

Client Sample ID: MW-38
Collection Date: 8/20/2015 9:30:00 AM
Matrix: Aqueous

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES				Analyst: DJF			
2-Hexanone	ND	10		µg/L	1	8/21/2015 7:29:34 PM	R28392
Isopropylbenzene	ND	1.0		µg/L	1	8/21/2015 7:29:34 PM	R28392
4-Isopropyltoluene	ND	1.0		µg/L	1	8/21/2015 7:29:34 PM	R28392
4-Methyl-2-pentanone	ND	10		µg/L	1	8/21/2015 7:29:34 PM	R28392
Methylene Chloride	ND	3.0		µg/L	1	8/21/2015 7:29:34 PM	R28392
n-Butylbenzene	ND	3.0		µg/L	1	8/21/2015 7:29:34 PM	R28392
n-Propylbenzene	ND	1.0		µg/L	1	8/21/2015 7:29:34 PM	R28392
sec-Butylbenzene	ND	1.0		µg/L	1	8/21/2015 7:29:34 PM	R28392
Styrene	ND	1.0		µg/L	1	8/21/2015 7:29:34 PM	R28392
tert-Butylbenzene	ND	1.0		µg/L	1	8/21/2015 7:29:34 PM	R28392
1,1,1,2-Tetrachloroethane	ND	1.0		µg/L	1	8/21/2015 7:29:34 PM	R28392
1,1,2,2-Tetrachloroethane	ND	2.0		µg/L	1	8/21/2015 7:29:34 PM	R28392
Tetrachloroethene (PCE)	ND	1.0		µg/L	1	8/21/2015 7:29:34 PM	R28392
trans-1,2-DCE	ND	1.0		µg/L	1	8/21/2015 7:29:34 PM	R28392
trans-1,3-Dichloropropene	ND	1.0		µg/L	1	8/21/2015 7:29:34 PM	R28392
1,2,3-Trichlorobenzene	ND	1.0		µg/L	1	8/21/2015 7:29:34 PM	R28392
1,2,4-Trichlorobenzene	ND	1.0		µg/L	1	8/21/2015 7:29:34 PM	R28392
1,1,1-Trichloroethane	ND	1.0		µg/L	1	8/21/2015 7:29:34 PM	R28392
1,1,2-Trichloroethane	ND	1.0		µg/L	1	8/21/2015 7:29:34 PM	R28392
Trichloroethene (TCE)	ND	1.0		µg/L	1	8/21/2015 7:29:34 PM	R28392
Trichlorofluoromethane	ND	1.0		µg/L	1	8/21/2015 7:29:34 PM	R28392
1,2,3-Trichloropropane	ND	2.0		µg/L	1	8/21/2015 7:29:34 PM	R28392
Vinyl chloride	ND	1.0		µg/L	1	8/21/2015 7:29:34 PM	R28392
Xylenes, Total	ND	1.5		µg/L	1	8/21/2015 7:29:34 PM	R28392
Surr: 1,2-Dichloroethane-d4	97.7	70-130		%REC	1	8/21/2015 7:29:34 PM	R28392
Surr: 4-Bromofluorobenzene	111	70-130		%REC	1	8/21/2015 7:29:34 PM	R28392
Surr: Dibromofluoromethane	109	70-130		%REC	1	8/21/2015 7:29:34 PM	R28392
Surr: Toluene-d8	95.8	70-130		%REC	1	8/21/2015 7:29:34 PM	R28392

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
				Page 37 of 62

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order: 1508A58

Date Reported: 9/15/2015

CLIENT: Western Refining Southwest, Inc.
Project: Down Gradient Wells 8-20-15
Lab ID: 1508A58-006B

Client Sample ID: MW-38
Collection Date: 8/20/2015 9:30:00 AM
Matrix: Aqueous

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D: GASOLINE RANGE							Analyst: DJF
Gasoline Range Organics (GRO)	ND	0.050		mg/L	1	8/21/2015 7:29:34 PM	C28392
Surr: BFB	98.0	70-130		%REC	1	8/21/2015 7:29:34 PM	C28392

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order: 1508A58

Date Reported: 9/15/2015

CLIENT: Western Refining Southwest, Inc.
Project: Down Gradient Wells 8-20-15
Lab ID: 1508A58-006C

Client Sample ID: MW-38
Collection Date: 8/20/2015 9:30:00 AM
Matrix: Aqueous

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D: DIESEL RANGE							Analyst: TOM
Diesel Range Organics (DRO)	ND	0.20		mg/L	1	8/21/2015 8:23:10 PM	20920
Motor Oil Range Organics (MRO)	ND	2.5		mg/L	1	8/21/2015 8:23:10 PM	20920
Surr: DNOP	104	84.6-165		%REC	1	8/21/2015 8:23:10 PM	20920

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order: 1508A58

Date Reported: 9/15/2015

CLIENT: Western Refining Southwest, Inc.
Project: Down Gradient Wells 8-20-15
Lab ID: 1508A58-006D

Client Sample ID: MW-38
Collection Date: 8/20/2015 9:30:00 AM
Matrix: Aqueous

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
CARBON DIOXIDE							Analyst: JRR
Total Carbon Dioxide	310	1.0	H	mg CO2/L	1	8/27/2015 3:48:57 PM	R28535
EPA METHOD 300.0: ANIONS							Analyst: LGT
Fluoride	0.84	0.10		mg/L	1	8/21/2015 6:16:03 PM	R28397
Chloride	30	10		mg/L	20	8/21/2015 6:28:28 PM	R28397
Nitrogen, Nitrite (As N)	ND	0.10		mg/L	1	8/21/2015 6:16:03 PM	R28397
Bromide	0.38	0.10		mg/L	1	8/21/2015 6:16:03 PM	R28397
Nitrogen, Nitrate (As N)	ND	0.10		mg/L	1	8/21/2015 6:16:03 PM	R28397
Phosphorus, Orthophosphate (As P)	ND	0.50		mg/L	1	8/21/2015 6:16:03 PM	R28397
Sulfate	30	0.50		mg/L	1	8/21/2015 6:16:03 PM	R28397
SM2510B: SPECIFIC CONDUCTANCE							Analyst: JRR
Conductivity	790	0.010		µmhos/cm	1	8/27/2015 3:48:57 PM	R28535
SM2320B: ALKALINITY							Analyst: JRR
Bicarbonate (As CaCO3)	345.6	20.00		mg/L CaCO3	1	8/27/2015 3:48:57 PM	R28535
Carbonate (As CaCO3)	ND	2.000		mg/L CaCO3	1	8/27/2015 3:48:57 PM	R28535
Total Alkalinity (as CaCO3)	345.6	20.00		mg/L CaCO3	1	8/27/2015 3:48:57 PM	R28535
SM2540C MOD: TOTAL DISSOLVED SOLIDS							Analyst: KS
Total Dissolved Solids	505	100	*D	mg/L	1	8/26/2015 10:21:00 AM	20939

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order: 1508A58

Date Reported: 9/15/2015

CLIENT: Western Refining Southwest, Inc.
Project: Down Gradient Wells 8-20-15
Lab ID: 1508A58-006E

Client Sample ID: MW-38
Collection Date: 8/20/2015 9:30:00 AM
Matrix: Aqueous

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 7470: MERCURY				Analyst: JLF			
Mercury	ND	0.00020		mg/L	1	9/1/2015 3:34:28 PM	21063
EPA METHOD 6010B: DISSOLVED METALS				Analyst: MED			
Arsenic	ND	0.020		mg/L	1	8/28/2015 2:00:07 PM	A28540
Barium	0.16	0.020		mg/L	1	8/28/2015 2:00:07 PM	A28540
Cadmium	ND	0.0020		mg/L	1	8/28/2015 2:00:07 PM	A28540
Calcium	37	1.0		mg/L	1	8/28/2015 2:00:07 PM	A28540
Chromium	ND	0.0060		mg/L	1	8/28/2015 2:00:07 PM	A28540
Copper	ND	0.0060		mg/L	1	8/28/2015 2:00:07 PM	A28540
Iron	0.032	0.020		mg/L	1	8/28/2015 2:00:07 PM	A28540
Lead	ND	0.0050		mg/L	1	8/28/2015 2:00:07 PM	A28540
Magnesium	6.0	1.0		mg/L	1	8/28/2015 2:00:07 PM	A28540
Manganese	0.93	0.0020		mg/L	1	8/28/2015 2:00:07 PM	A28540
Potassium	1.1	1.0		mg/L	1	8/28/2015 2:00:07 PM	A28540
Selenium	ND	0.050		mg/L	1	8/28/2015 2:00:07 PM	A28540
Silver	ND	0.0050		mg/L	1	8/28/2015 2:00:07 PM	A28540
Sodium	130	5.0		mg/L	5	8/28/2015 3:06:27 PM	A28540
Uranium	ND	0.10		mg/L	1	8/28/2015 2:00:07 PM	A28540
Zinc	0.022	0.020		mg/L	1	8/28/2015 2:00:07 PM	A28540

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order: 1508A58

Date Reported: 9/15/2015

CLIENT: Western Refining Southwest, Inc.
Project: Down Gradient Wells 8-20-15
Lab ID: 1508A58-006F

Client Sample ID: MW-38
Collection Date: 8/20/2015 9:30:00 AM
Matrix: Aqueous

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 7470: MERCURY							Analyst: JLF
Mercury	ND	0.00020		mg/L	1	9/1/2015 3:36:34 PM	21063
EPA 6010B: TOTAL RECOVERABLE METALS							Analyst: MED
Arsenic	ND	0.020		mg/L	1	8/25/2015 2:00:03 PM	20924
Barium	0.16	0.020		mg/L	1	8/25/2015 2:00:03 PM	20924
Cadmium	ND	0.0020		mg/L	1	8/25/2015 2:00:03 PM	20924
Chromium	ND	0.0060		mg/L	1	8/25/2015 2:00:03 PM	20924
Lead	ND	0.0050		mg/L	1	8/25/2015 2:00:03 PM	20924
Selenium	ND	0.050		mg/L	1	8/25/2015 2:00:03 PM	20924
Silver	ND	0.0050		mg/L	1	8/25/2015 2:00:03 PM	20924

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Analytical Report

Lab Order: 1508A58

Hall Environmental Analysis Laboratory, Inc.

Date Reported: 9/15/2015

CLIENT: Western Refining Southwest, Inc.
Project: Down Gradient Wells 8-20-15
Lab ID: 1508A58-007A

Client Sample ID: MW-11 Dup
Collection Date: 8/20/2015 7:40:00 AM
Matrix: Aqueous

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES				Analyst: DJF			
Benzene	14	1.0		µg/L	1	8/21/2015 8:24:27 PM	R28392
Toluene	ND	1.0		µg/L	1	8/21/2015 8:24:27 PM	R28392
Ethylbenzene	1.1	1.0		µg/L	1	8/21/2015 8:24:27 PM	R28392
Methyl tert-butyl ether (MTBE)	1.9	1.0		µg/L	1	8/21/2015 8:24:27 PM	R28392
1,2,4-Trimethylbenzene	370	10		µg/L	10	8/21/2015 7:57:01 PM	R28392
1,3,5-Trimethylbenzene	ND	1.0		µg/L	1	8/21/2015 8:24:27 PM	R28392
1,2-Dichloroethane (EDC)	ND	1.0		µg/L	1	8/21/2015 8:24:27 PM	R28392
1,2-Dibromoethane (EDB)	ND	1.0		µg/L	1	8/21/2015 8:24:27 PM	R28392
Naphthalene	65	2.0		µg/L	1	8/21/2015 8:24:27 PM	R28392
1-Methylnaphthalene	15	4.0		µg/L	1	8/21/2015 8:24:27 PM	R28392
2-Methylnaphthalene	17	4.0		µg/L	1	8/21/2015 8:24:27 PM	R28392
Acetone	ND	10		µg/L	1	8/21/2015 8:24:27 PM	R28392
Bromobenzene	ND	1.0		µg/L	1	8/21/2015 8:24:27 PM	R28392
Bromodichloromethane	ND	1.0		µg/L	1	8/21/2015 8:24:27 PM	R28392
Bromoform	ND	1.0		µg/L	1	8/21/2015 8:24:27 PM	R28392
Bromomethane	ND	3.0		µg/L	1	8/21/2015 8:24:27 PM	R28392
2-Butanone	ND	10		µg/L	1	8/21/2015 8:24:27 PM	R28392
Carbon disulfide	ND	10		µg/L	1	8/21/2015 8:24:27 PM	R28392
Carbon Tetrachloride	ND	1.0		µg/L	1	8/21/2015 8:24:27 PM	R28392
Chlorobenzene	ND	1.0		µg/L	1	8/21/2015 8:24:27 PM	R28392
Chloroethane	ND	2.0		µg/L	1	8/21/2015 8:24:27 PM	R28392
Chloroform	ND	1.0		µg/L	1	8/21/2015 8:24:27 PM	R28392
Chloromethane	ND	3.0		µg/L	1	8/21/2015 8:24:27 PM	R28392
2-Chlorotoluene	ND	1.0		µg/L	1	8/21/2015 8:24:27 PM	R28392
4-Chlorotoluene	ND	1.0		µg/L	1	8/21/2015 8:24:27 PM	R28392
cis-1,2-DCE	ND	1.0		µg/L	1	8/21/2015 8:24:27 PM	R28392
cis-1,3-Dichloropropene	ND	1.0		µg/L	1	8/21/2015 8:24:27 PM	R28392
1,2-Dibromo-3-chloropropane	ND	2.0		µg/L	1	8/21/2015 8:24:27 PM	R28392
Dibromochloromethane	ND	1.0		µg/L	1	8/21/2015 8:24:27 PM	R28392
Dibromomethane	ND	1.0		µg/L	1	8/21/2015 8:24:27 PM	R28392
1,2-Dichlorobenzene	ND	1.0		µg/L	1	8/21/2015 8:24:27 PM	R28392
1,3-Dichlorobenzene	ND	1.0		µg/L	1	8/21/2015 8:24:27 PM	R28392
1,4-Dichlorobenzene	ND	1.0		µg/L	1	8/21/2015 8:24:27 PM	R28392
Dichlorodifluoromethane	ND	1.0		µg/L	1	8/21/2015 8:24:27 PM	R28392
1,1-Dichloroethane	ND	1.0		µg/L	1	8/21/2015 8:24:27 PM	R28392
1,1-Dichloroethene	ND	1.0		µg/L	1	8/21/2015 8:24:27 PM	R28392
1,2-Dichloropropane	ND	1.0		µg/L	1	8/21/2015 8:24:27 PM	R28392
1,3-Dichloropropane	ND	1.0		µg/L	1	8/21/2015 8:24:27 PM	R28392
2,2-Dichloropropane	ND	2.0		µg/L	1	8/21/2015 8:24:27 PM	R28392
1,1-Dichloropropene	ND	1.0		µg/L	1	8/21/2015 8:24:27 PM	R28392
Hexachlorobutadiene	ND	1.0		µg/L	1	8/21/2015 8:24:27 PM	R28392

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
				Page 43 of 62

Analytical ReportLab Order: **1508A58****Hall Environmental Analysis Laboratory, Inc.**Date Reported: **9/15/2015**

CLIENT: Western Refining Southwest, Inc.
Project: Down Gradient Wells 8-20-15
Lab ID: 1508A58-007A

Client Sample ID: MW-11 Dup
Collection Date: 8/20/2015 7:40:00 AM
Matrix: Aqueous

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES				Analyst: DJF			
2-Hexanone	ND	10		µg/L	1	8/21/2015 8:24:27 PM	R28392
Isopropylbenzene	62	1.0		µg/L	1	8/21/2015 8:24:27 PM	R28392
4-Isopropyltoluene	4.6	1.0		µg/L	1	8/21/2015 8:24:27 PM	R28392
4-Methyl-2-pentanone	ND	10		µg/L	1	8/21/2015 8:24:27 PM	R28392
Methylene Chloride	ND	3.0		µg/L	1	8/21/2015 8:24:27 PM	R28392
n-Butylbenzene	ND	3.0		µg/L	1	8/21/2015 8:24:27 PM	R28392
n-Propylbenzene	52	1.0		µg/L	1	8/21/2015 8:24:27 PM	R28392
sec-Butylbenzene	12	1.0		µg/L	1	8/21/2015 8:24:27 PM	R28392
Styrene	ND	1.0		µg/L	1	8/21/2015 8:24:27 PM	R28392
tert-Butylbenzene	2.2	1.0		µg/L	1	8/21/2015 8:24:27 PM	R28392
1,1,1,2-Tetrachloroethane	ND	1.0		µg/L	1	8/21/2015 8:24:27 PM	R28392
1,1,2,2-Tetrachloroethane	ND	2.0		µg/L	1	8/21/2015 8:24:27 PM	R28392
Tetrachloroethene (PCE)	ND	1.0		µg/L	1	8/21/2015 8:24:27 PM	R28392
trans-1,2-DCE	ND	1.0		µg/L	1	8/21/2015 8:24:27 PM	R28392
trans-1,3-Dichloropropene	ND	1.0		µg/L	1	8/21/2015 8:24:27 PM	R28392
1,2,3-Trichlorobenzene	ND	1.0		µg/L	1	8/21/2015 8:24:27 PM	R28392
1,2,4-Trichlorobenzene	ND	1.0		µg/L	1	8/21/2015 8:24:27 PM	R28392
1,1,1-Trichloroethane	ND	1.0		µg/L	1	8/21/2015 8:24:27 PM	R28392
1,1,2-Trichloroethane	ND	1.0		µg/L	1	8/21/2015 8:24:27 PM	R28392
Trichloroethene (TCE)	ND	1.0		µg/L	1	8/21/2015 8:24:27 PM	R28392
Trichlorofluoromethane	ND	1.0		µg/L	1	8/21/2015 8:24:27 PM	R28392
1,2,3-Trichloropropane	ND	2.0		µg/L	1	8/21/2015 8:24:27 PM	R28392
Vinyl chloride	ND	1.0		µg/L	1	8/21/2015 8:24:27 PM	R28392
Xylenes, Total	ND	1.5		µg/L	1	8/21/2015 8:24:27 PM	R28392
Surr: 1,2-Dichloroethane-d4	94.0	70-130		%REC	1	8/21/2015 8:24:27 PM	R28392
Surr: 4-Bromofluorobenzene	98.2	70-130		%REC	1	8/21/2015 8:24:27 PM	R28392
Surr: Dibromofluoromethane	98.0	70-130		%REC	1	8/21/2015 8:24:27 PM	R28392
Surr: Toluene-d8	105	70-130		%REC	1	8/21/2015 8:24:27 PM	R28392

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
				Page 44 of 62

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order: 1508A58

Date Reported: 9/15/2015

CLIENT: Western Refining Southwest, Inc.
Project: Down Gradient Wells 8-20-15
Lab ID: 1508A58-007B

Client Sample ID: MW-11 Dup
Collection Date: 8/20/2015 7:40:00 AM
Matrix: Aqueous

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D: GASOLINE RANGE							Analyst: DJF
Gasoline Range Organics (GRO)	2.4	0.050		mg/L	1	8/21/2015 8:24:27 PM	C28392
Surr: BFB	118	70-130		%REC	1	8/21/2015 8:24:27 PM	C28392

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order: 1508A58

Date Reported: 9/15/2015

CLIENT: Western Refining Southwest, Inc.
Project: Down Gradient Wells 8-20-15
Lab ID: 1508A58-007C

Client Sample ID: MW-11 Dup
Collection Date: 8/20/2015 7:40:00 AM
Matrix: Aqueous

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D: DIESEL RANGE							Analyst: TOM
Diesel Range Organics (DRO)	1.7	0.20		mg/L	1	8/21/2015 8:44:48 PM	20920
Motor Oil Range Organics (MRO)	ND	2.5		mg/L	1	8/21/2015 8:44:48 PM	20920
Surr: DNOP	105	84.6-165		%REC	1	8/21/2015 8:44:48 PM	20920

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Analytical ReportLab Order: **1508A58****Hall Environmental Analysis Laboratory, Inc.**Date Reported: **9/15/2015**

CLIENT: Western Refining Southwest, Inc.
Project: Down Gradient Wells 8-20-15
Lab ID: 1508A58-007D

Client Sample ID: MW-11 Dup
Collection Date: 8/20/2015 7:40:00 AM
Matrix: Aqueous

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
CARBON DIOXIDE							Analyst: JRR
Total Carbon Dioxide	990	1.0	H	mg CO2/L	1	8/27/2015 4:03:09 PM	R28535
EPA METHOD 300.0: ANIONS							Analyst: LGT
Fluoride	0.34	0.10		mg/L	1	8/21/2015 6:40:52 PM	R28397
Chloride	80	10		mg/L	20	8/21/2015 6:53:17 PM	R28397
Nitrogen, Nitrite (As N)	ND	0.10		mg/L	1	8/21/2015 6:40:52 PM	R28397
Bromide	0.19	0.10		mg/L	1	8/21/2015 6:40:52 PM	R28397
Nitrogen, Nitrate (As N)	0.15	0.10		mg/L	1	8/21/2015 6:40:52 PM	R28397
Phosphorus, Orthophosphate (As P)	ND	0.50		mg/L	1	8/21/2015 6:40:52 PM	R28397
Sulfate	7.1	0.50		mg/L	1	8/21/2015 6:40:52 PM	R28397
SM2510B: SPECIFIC CONDUCTANCE							Analyst: JRR
Conductivity	2000	0.010		µmhos/cm	1	8/27/2015 4:03:09 PM	R28535
SM2320B: ALKALINITY							Analyst: JRR
Bicarbonate (As CaCO3)	1046	20.00		mg/L CaCO3	1	8/27/2015 4:03:09 PM	R28535
Carbonate (As CaCO3)	ND	2.000		mg/L CaCO3	1	8/27/2015 4:03:09 PM	R28535
Total Alkalinity (as CaCO3)	1046	20.00		mg/L CaCO3	1	8/27/2015 4:03:09 PM	R28535
SM2540C MOD: TOTAL DISSOLVED SOLIDS							Analyst: KS
Total Dissolved Solids	1370	100	*D	mg/L	1	8/26/2015 10:21:00 AM	20939

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order: 1508A58

Date Reported: 9/15/2015

CLIENT: Western Refining Southwest, Inc.
Project: Down Gradient Wells 8-20-15
Lab ID: 1508A58-007E

Client Sample ID: MW-11 Dup
Collection Date: 8/20/2015 7:40:00 AM
Matrix: Aqueous

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 7470: MERCURY							Analyst: JLF
Mercury	ND	0.00020		mg/L	1	9/1/2015 3:38:40 PM	21063
EPA METHOD 6010B: DISSOLVED METALS							Analyst: MED
Arsenic	ND	0.020		mg/L	1	8/28/2015 2:02:06 PM	A28540
Barium	0.86	0.020		mg/L	1	8/28/2015 2:02:06 PM	A28540
Cadmium	ND	0.0020		mg/L	1	8/28/2015 2:02:06 PM	A28540
Calcium	100	5.0		mg/L	5	8/28/2015 3:08:33 PM	A28540
Chromium	ND	0.0060		mg/L	1	8/28/2015 2:02:06 PM	A28540
Copper	ND	0.0060		mg/L	1	8/28/2015 2:02:06 PM	A28540
Iron	9.4	0.40		mg/L	20	8/28/2015 3:10:24 PM	A28540
Lead	0.0051	0.0050		mg/L	1	8/28/2015 2:02:06 PM	A28540
Magnesium	22	1.0		mg/L	1	8/28/2015 2:02:06 PM	A28540
Manganese	1.5	0.010		mg/L	5	8/28/2015 3:08:33 PM	A28540
Potassium	1.6	1.0		mg/L	1	8/28/2015 2:02:06 PM	A28540
Selenium	ND	0.050		mg/L	1	8/28/2015 2:02:06 PM	A28540
Silver	ND	0.0050		mg/L	1	8/28/2015 2:02:06 PM	A28540
Sodium	400	5.0		mg/L	5	8/28/2015 3:08:33 PM	A28540
Uranium	ND	0.10		mg/L	1	8/28/2015 2:02:06 PM	A28540
Zinc	ND	0.020		mg/L	1	8/28/2015 2:02:06 PM	A28540

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Analytical ReportLab Order: **1508A58**Date Reported: **9/15/2015****Hall Environmental Analysis Laboratory, Inc.**

CLIENT: Western Refining Southwest, Inc.
Project: Down Gradient Wells 8-20-15
Lab ID: 1508A58-007F

Client Sample ID: MW-11 Dup
Collection Date: 8/20/2015 7:40:00 AM
Matrix: Aqueous

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 7470: MERCURY							Analyst: JLF
Mercury	ND	0.00020		mg/L	1	9/1/2015 3:40:39 PM	21063
EPA 6010B: TOTAL RECOVERABLE METALS							Analyst: MED
Arsenic	0.038	0.020		mg/L	1	8/25/2015 2:01:58 PM	20924
Barium	0.91	0.020		mg/L	1	8/25/2015 2:01:58 PM	20924
Cadmium	ND	0.0020		mg/L	1	8/25/2015 2:01:58 PM	20924
Chromium	ND	0.0060		mg/L	1	8/25/2015 2:01:58 PM	20924
Lead	ND	0.0050		mg/L	1	8/25/2015 2:01:58 PM	20924
Selenium	ND	0.050		mg/L	1	8/25/2015 2:01:58 PM	20924
Silver	ND	0.0050		mg/L	1	8/25/2015 2:01:58 PM	20924

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1508A58

15-Sep-15

Client: Western Refining Southwest, Inc.

Project: Down Gradient Wells 8-20-15

Sample ID	MB	SampType: MBLK			TestCode: EPA Method 300.0: Anions					
Client ID:	PBW	Batch ID: R28397			RunNo: 28397					
Prep Date:		Analysis Date: 8/21/2015			SeqNo: 857790		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	ND	0.10								
Chloride	ND	0.50								
Nitrogen, Nitrite (As N)	ND	0.10								
Bromide	ND	0.10								
Nitrogen, Nitrate (As N)	ND	0.10								
Phosphorus, Orthophosphate (As P	ND	0.50								
Sulfate	ND	0.50								

Sample ID	LCS		SampType: LCS		TestCode: EPA Method 300.0: Anions					
Client ID:	LCSW		Batch ID: R28397		RunNo: 28397					
Prep Date:			Analysis Date: 8/21/2015		SeqNo: 857791		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	0.51	0.10	0.5000	0	102	90	110			
Chloride	4.9	0.50	5.000	0	98.1	90	110			
Nitrogen, Nitrite (As N)	1.0	0.10	1.000	0	99.6	90	110			
Bromide	2.5	0.10	2.500	0	100	90	110			
Nitrogen, Nitrate (As N)	2.6	0.10	2.500	0	103	90	110			
Phosphorus, Orthophosphate (As P	5.0	0.50	5.000	0	100	90	110			
Sulfate	10	0.50	10.00	0	100	90	110			

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1508A58

15-Sep-15

Client: Western Refining Southwest, Inc.

Project: Down Gradient Wells 8-20-15

Sample ID	MB-20920	SampType: MBLK			TestCode: EPA Method 8015D: Diesel Range					
Client ID:	PBW	Batch ID: 20920			RunNo: 28404					
Prep Date:	8/21/2015	Analysis Date: 8/21/2015			SeqNo: 858161		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	0.20								
Motor Oil Range Organics (MRO)	ND	2.5								
Surr: DNOP	0.48		0.5000		96.1	84.6	165			

Sample ID	LCS-20920		SampType: LCS		TestCode: EPA Method 8015D: Diesel Range					
Client ID:	LCSW		Batch ID: 20920		RunNo: 28404					
Prep Date:	8/21/2015		Analysis Date: 8/21/2015		SeqNo: 858162		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	2.8	0.20	2.500	0	111	67.3	174			
Surr: DNOP	0.25		0.2500		101	84.6	165			

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1508A58

15-Sep-15

Client: Western Refining Southwest, Inc.**Project:** Down Gradient Wells 8-20-15

Sample ID	rb	SampType: MBLK			TestCode: EPA Method 8260B: VOLATILES					
Client ID:	PBW	Batch ID: R28392			RunNo: 28392					
Prep Date:		Analysis Date: 8/21/2015			SeqNo: 857554	Units: µg/L				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	1.0								
Toluene	ND	1.0								
Ethylbenzene	ND	1.0								
Methyl tert-butyl ether (MTBE)	ND	1.0								
1,2,4-Trimethylbenzene	ND	1.0								
1,3,5-Trimethylbenzene	ND	1.0								
1,2-Dichloroethane (EDC)	ND	1.0								
1,2-Dibromoethane (EDB)	ND	1.0								
Naphthalene	ND	2.0								
1-Methylnaphthalene	ND	4.0								
2-Methylnaphthalene	ND	4.0								
Acetone	ND	10								
Bromobenzene	ND	1.0								
Bromodichloromethane	ND	1.0								
Bromoform	ND	1.0								
Bromomethane	ND	3.0								
2-Butanone	ND	10								
Carbon disulfide	ND	10								
Carbon Tetrachloride	ND	1.0								
Chlorobenzene	ND	1.0								
Chloroethane	ND	2.0								
Chloroform	ND	1.0								
Chloromethane	ND	3.0								
2-Chlorotoluene	ND	1.0								
4-Chlorotoluene	ND	1.0								
cis-1,2-DCE	ND	1.0								
cis-1,3-Dichloropropene	ND	1.0								
1,2-Dibromo-3-chloropropane	ND	2.0								
Dibromochloromethane	ND	1.0								
Dibromomethane	ND	1.0								
1,2-Dichlorobenzene	ND	1.0								
1,3-Dichlorobenzene	ND	1.0								
1,4-Dichlorobenzene	ND	1.0								
Dichlorodifluoromethane	ND	1.0								
1,1-Dichloroethane	ND	1.0								
1,1-Dichloroethene	ND	1.0								
1,2-Dichloropropane	ND	1.0								
1,3-Dichloropropane	ND	1.0								
2,2-Dichloropropane	ND	2.0								

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1508A58

15-Sep-15

Client: Western Refining Southwest, Inc.

Project: Down Gradient Wells 8-20-15

Sample ID	rb	SampType: MBLK				TestCode: EPA Method 8260B: VOLATILES				
Client ID:	PBW	Batch ID: R28392				RunNo: 28392				
Prep Date:		Analysis Date: 8/21/2015				SeqNo: 857554	Units: µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,1-Dichloropropene	ND	1.0								
Hexachlorobutadiene	ND	1.0								
2-Hexanone	ND	10								
Isopropylbenzene	ND	1.0								
4-Isopropyltoluene	ND	1.0								
4-Methyl-2-pentanone	ND	10								
Methylene Chloride	ND	3.0								
n-Butylbenzene	ND	3.0								
n-Propylbenzene	ND	1.0								
sec-Butylbenzene	ND	1.0								
Styrene	ND	1.0								
tert-Butylbenzene	ND	1.0								
1,1,1,2-Tetrachloroethane	ND	1.0								
1,1,2,2-Tetrachloroethane	ND	2.0								
Tetrachloroethene (PCE)	ND	1.0								
trans-1,2-DCE	ND	1.0								
trans-1,3-Dichloropropene	ND	1.0								
1,2,3-Trichlorobenzene	ND	1.0								
1,2,4-Trichlorobenzene	ND	1.0								
1,1,1-Trichloroethane	ND	1.0								
1,1,2-Trichloroethane	ND	1.0								
Trichloroethene (TCE)	ND	1.0								
Trichlorofluoromethane	ND	1.0								
1,2,3-Trichloropropane	ND	2.0								
Vinyl chloride	ND	1.0								
Xylenes, Total	ND	1.5								
Surr: 1,2-Dichloroethane-d4	9.5		10.00		94.7	70	130			
Surr: 4-Bromofluorobenzene	11		10.00		108	70	130			
Surr: Dibromofluoromethane	11		10.00		107	70	130			
Surr: Toluene-d8	9.8		10.00		98.0	70	130			

Sample ID	100ng lcs	SampType: LCS				TestCode: EPA Method 8260B: VOLATILES				
Client ID:	LCSW	Batch ID: R28392				RunNo: 28392				
Prep Date:		Analysis Date: 8/21/2015				SeqNo: 857555	Units: µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	22	1.0	20.00	0	111	70	130			
Toluene	21	1.0	20.00	0	106	70	130			
Chlorobenzene	20	1.0	20.00	0	102	70	130			

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1508A58

15-Sep-15

Client: Western Refining Southwest, Inc.

Project: Down Gradient Wells 8-20-15

Sample ID	100ng lcs	SampType:	LCS	TestCode:	EPA Method 8260B: VOLATILES						
Client ID:	LCSW	Batch ID:	R28392	RunNo:	28392						
Prep Date:		Analysis Date:	8/21/2015	SeqNo:	857555	Units:	µg/L				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
1,1-Dichloroethene	21	1.0	20.00	0	107	70	130				
Trichloroethene (TCE)	22	1.0	20.00	0	112	70	130				
Surr: 1,2-Dichloroethane-d4	9.9		10.00		98.6	70	130				
Surr: 4-Bromofluorobenzene	11		10.00		107	70	130				
Surr: Dibromofluoromethane	11		10.00		114	70	130				
Surr: Toluene-d8	9.8		10.00		97.9	70	130				

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1508A58

15-Sep-15

Client: Western Refining Southwest, Inc.

Project: Down Gradient Wells 8-20-15

Sample ID	MB-21063		SampType: MBLK		TestCode: EPA Method 7470: Mercury					
Client ID:	PBW		Batch ID: 21063		RunNo: 28597					
Prep Date:	8/31/2015		Analysis Date: 9/1/2015		SeqNo: 865056		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercurv	ND	0.00020								

Sample ID	LCS-21063		SampType: LCS		TestCode: EPA Method 7470: Mercury					
Client ID:	LCSW		Batch ID: 21063		RunNo: 28597					
Prep Date:	8/31/2015		Analysis Date: 9/1/2015		SeqNo: 865057		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.0054	0.00020	0.005000	0	107	80	120			

Sample ID	1508A58-007FMS		SampType: MS		TestCode: EPA Method 7470: Mercury					
Client ID:	MW-11 Dup		Batch ID: 21063		RunNo: 28597					
Prep Date:	8/31/2015		Analysis Date: 9/1/2015		SeqNo: 865074		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.0046	0.00020	0.005000	0	92.5	75	125			

Sample ID	1508A58-007FMSD		SampType:	MSD		TestCode:	EPA Method 7470: Mercury				
Client ID:	MW-11 Dup		Batch ID:	21063		RunNo:	28597				
Prep Date:	8/31/2015		Analysis Date:	9/1/2015		SeqNo:	865075		Units: mg/L		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Mercury	0.0045	0.00020	0.005000	0	90.1	75	125	2.64	20		

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1508A58

15-Sep-15

Client: Western Refining Southwest, Inc.

Project: Down Gradient Wells 8-20-15

Sample ID	MB	SampType:	MBLK	TestCode:	EPA Method 6010B: Dissolved Metals					
Client ID:	PBW	Batch ID:	A28540	RunNo:	28540					
Prep Date:		Analysis Date:	8/28/2015	SeqNo:	863198	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	ND	0.020								
Barium	ND	0.020								
Cadmium	ND	0.0020								
Calcium	ND	1.0								
Chromium	ND	0.0060								
Copper	ND	0.0060								
Iron	ND	0.020								
Lead	ND	0.0050								
Magnesium	ND	1.0								
Manganese	ND	0.0020								
Potassium	ND	1.0								
Selenium	ND	0.050								
Silver	ND	0.0050								
Sodium	ND	1.0								
Uranium	ND	0.10								
Zinc	ND	0.020								

Sample ID	LCS	SampType:	LCS	TestCode:	EPA Method 6010B: Dissolved Metals					
Client ID:	LCSW	Batch ID:	A28540	RunNo:	28540					
Prep Date:		Analysis Date:	8/28/2015	SeqNo:	863199	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	0.52	0.020	0.5000	0	103	80	120			
Barium	0.48	0.020	0.5000	0	96.3	80	120			
Cadmium	0.49	0.0020	0.5000	0	97.6	80	120			
Calcium	58	1.0	50.00	0	117	80	120			
Chromium	0.47	0.0060	0.5000	0	94.6	80	120			
Copper	0.49	0.0060	0.5000	0	97.9	80	120			
Iron	0.48	0.020	0.5000	0	95.9	80	120			
Lead	0.49	0.0050	0.5000	0	97.5	80	120			
Magnesium	57	1.0	50.00	0	114	80	120			
Manganese	0.47	0.0020	0.5000	0	93.8	80	120			
Potassium	55	1.0	50.00	0	110	80	120			
Selenium	0.49	0.050	0.5000	0	98.2	80	120			
Silver	0.099	0.0050	0.1000	0	99.1	80	120			
Sodium	56	1.0	50.00	0	112	80	120			
Uranium	0.48	0.10	0.5000	0	95.6	80	120			
Zinc	0.48	0.020	0.5000	0	96.3	80	120			

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1508A58

15-Sep-15

Client: Western Refining Southwest, Inc.

Project: Down Gradient Wells 8-20-15

Sample ID	1508A58-002EMS		SampType:	MS		TestCode:	EPA Method 6010B: Dissolved Metals			
Client ID:	MW-12		Batch ID:	A28540		RunNo:	28540			
Prep Date:			Analysis Date:	8/28/2015		SeqNo:	863211		Units: mg/L	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	0.52	0.020	0.5000	0	103	75	125			
Barium	0.51	0.020	0.5000	0.04714	92.7	75	125			
Cadmium	0.48	0.0020	0.5000	0	96.4	75	125			
Calcium	97	1.0	50.00	47.80	99.2	75	125			
Chromium	0.47	0.0060	0.5000	0	93.7	75	125			
Copper	0.48	0.0060	0.5000	0	96.6	75	125			
Iron	0.47	0.020	0.5000	0.01254	91.5	75	125			
Lead	0.47	0.0050	0.5000	0	94.2	75	125			
Magnesium	57	1.0	50.00	6.875	100	75	125			
Manganese	0.48	0.0020	0.5000	0.03017	90.8	75	125			
Potassium	49	1.0	50.00	0.7409	97.3	75	125			
Selenium	0.54	0.050	0.5000	0	107	75	125			
Silver	0.091	0.0050	0.1000	0	91.4	75	125			
Sodium	80	1.0	50.00	31.01	97.6	75	125			
Uranium	0.45	0.10	0.5000	0	90.5	75	125			
Zinc	0.48	0.020	0.5000	0.01900	92.8	75	125			

Sample ID	1508A58-002EMSD		SampType:	MSD		TestCode:	EPA Method 6010B: Dissolved Metals			
Client ID:	MW-12		Batch ID:	A28540		RunNo:	28540			
Prep Date:			Analysis Date:	8/28/2015		SeqNo:	863212		Units: mg/L	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	0.51	0.020	0.5000	0	103	75	125	0.284	20	
Barium	0.50	0.020	0.5000	0.04714	91.1	75	125	1.59	20	
Cadmium	0.47	0.0020	0.5000	0	94.9	75	125	1.57	20	
Calcium	93	1.0	50.00	47.80	90.4	75	125	4.59	20	
Chromium	0.46	0.0060	0.5000	0	92.1	75	125	1.74	20	
Copper	0.47	0.0060	0.5000	0	93.9	75	125	2.76	20	
Iron	0.46	0.020	0.5000	0.01254	90.1	75	125	1.55	20	
Lead	0.46	0.0050	0.5000	0	92.7	75	125	1.61	20	
Magnesium	54	1.0	50.00	6.875	95.0	75	125	4.82	20	
Manganese	0.48	0.0020	0.5000	0.03017	89.5	75	125	1.31	20	
Potassium	47	1.0	50.00	0.7409	91.6	75	125	5.86	20	
Selenium	0.53	0.050	0.5000	0	105	75	125	1.80	20	
Silver	0.088	0.0050	0.1000	0	88.5	75	125	3.19	20	
Sodium	77	1.0	50.00	31.01	92.9	75	125	2.97	20	
Uranium	0.46	0.10	0.5000	0	91.4	75	125	1.02	20	
Zinc	0.48	0.020	0.5000	0.01900	91.5	75	125	1.38	20	

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1508A58

15-Sep-15

Client: Western Refining Southwest, Inc.

Project: Down Gradient Wells 8-20-15

Sample ID	1508A58-001FMS		SampType:	MS		TestCode:	EPA 6010B: Total Recoverable Metals			
Client ID:	MW-11		Batch ID:	20924		RunNo:	28442			
Prep Date:	8/21/2015		Analysis Date:	8/25/2015		SeqNo:	859408		Units: mg/L	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	0.60	0.020	0.5000	0.03502	113	75	125			
Cadmium	0.52	0.0020	0.5000	0	104	75	125			
Chromium	0.51	0.0060	0.5000	0	102	75	125			
Lead	0.53	0.0050	0.5000	0.007480	105	75	125			
Selenium	0.52	0.050	0.5000	0	104	75	125			
Silver	0.10	0.0050	0.1000	0	104	75	125			

Sample ID	1508A58-001FMSD		SampType:	MSD		TestCode:	EPA 6010B: Total Recoverable Metals			
Client ID:	MW-11		Batch ID:	20924		RunNo:	28442			
Prep Date:	8/21/2015		Analysis Date:	8/25/2015		SeqNo:	859412		Units: mg/L	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	0.59	0.020	0.5000	0.03502	111	75	125	1.35	20	
Cadmium	0.51	0.0020	0.5000	0	103	75	125	0.793	20	
Chromium	0.51	0.0060	0.5000	0	102	75	125	0.400	20	
Lead	0.53	0.0050	0.5000	0.007480	104	75	125	1.49	20	
Selenium	0.51	0.050	0.5000	0	102	75	125	1.93	20	
Silver	0.11	0.0050	0.1000	0	106	75	125	1.77	20	

Sample ID	1508A58-001FMS		SampType:	MS		TestCode:	EPA 6010B: Total Recoverable Metals			
Client ID:	MW-11		Batch ID:	20924		RunNo:	28442			
Prep Date:	8/21/2015		Analysis Date:	8/25/2015		SeqNo:	859427		Units: mg/L	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	1.5	0.10	0.5000	0.9191	110	75	125			

Sample ID	1508A58-001FMSD		SampType:	MSD		TestCode:	EPA 6010B: Total Recoverable Metals			
Client ID:	MW-11		Batch ID:	20924		RunNo:	28442			
Prep Date:	8/21/2015		Analysis Date:	8/25/2015		SeqNo:	859428		Units: mg/L	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	1.5	0.10	0.5000	0.9191	109	75	125	0.406	20	

Sample ID	MB-20924		SampType:	MBLK		TestCode:	EPA 6010B: Total Recoverable Metals			
Client ID:	PBW		Batch ID:	20924		RunNo:	28442			
Prep Date:	8/21/2015		Analysis Date:	8/25/2015		SeqNo:	867265		Units: mg/L	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	ND	0.020								
Barium	ND	0.020								

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S % Recovery outside of range due to dilution or matrix

- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1508A58

15-Sep-15

Client: Western Refining Southwest, Inc.

Project: Down Gradient Wells 8-20-15

Sample ID	MB-20924		SampType: MBLK		TestCode: EPA 6010B: Total Recoverable Metals					
Client ID:	PBW		Batch ID: 20924		RunNo: 28442					
Prep Date:	8/21/2015		Analysis Date: 8/25/2015		SeqNo: 867265		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Cadmium	ND	0.0020								
Chromium	ND	0.0060								
Lead	ND	0.0050								
Selenium	ND	0.050								
Silver	ND	0.0050								

Sample ID	LCS-20924		SampType: LCS		TestCode: EPA 6010B: Total Recoverable Metals					
Client ID:	LCSW		Batch ID: 20924		RunNo: 28442					
Prep Date:	8/21/2015		Analysis Date: 8/25/2015		SeqNo: 867266		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	0.52	0.020	0.5000	0	105	80	120			
Barium	0.49	0.020	0.5000	0	98.7	80	120			
Cadmium	0.49	0.0020	0.5000	0	99.0	80	120			
Chromium	0.49	0.0060	0.5000	0	98.5	80	120			
Lead	0.50	0.0050	0.5000	0	101	80	120			
Selenium	0.50	0.050	0.5000	0	99.2	80	120			
Silver	0.10	0.0050	0.1000	0	99.6	80	120			

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1508A58

15-Sep-15

Client: Western Refining Southwest, Inc.

Project: Down Gradient Wells 8-20-15

Sample ID	rb	SampType:	MBLK	TestCode:	EPA Method 8015D: Gasoline Range					
Client ID:	PBW	Batch ID:	C28392	RunNo:	28392					
Prep Date:		Analysis Date:	8/21/2015	SeqNo:	857645	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	0.050								
Surr: BFB	10		10.00		101	70	130			

Sample ID	2.5ug gro lcs	SampType:	LCS	TestCode:	EPA Method 8015D: Gasoline Range					
Client ID:	LCSW	Batch ID:	C28392	RunNo:	28392					
Prep Date:		Analysis Date:	8/21/2015	SeqNo:	857646	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	0.48	0.050	0.5000	0	96.6	80.6	122			
Surr: BFB	9.8		10.00		97.5	70	130			

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1508A58

15-Sep-15

Client: Western Refining Southwest, Inc.

Project: Down Gradient Wells 8-20-15

Sample ID	mb-1		SampType:	MBLK		TestCode:	SM2320B: Alkalinity			
Client ID:	PBW		Batch ID:	R28535		RunNo:	28535			
Prep Date:			Analysis Date:	8/27/2015		SeqNo:	863066	Units:	mg/L CaCO3	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Alkalinity (as CaCO3)	ND	20.00								

Sample ID	lcs-1		SampType:	LCS		TestCode:	SM2320B: Alkalinity			
Client ID:	LCSW		Batch ID:	R28535		RunNo:	28535			
Prep Date:			Analysis Date:	8/27/2015		SeqNo:	863067	Units:	mg/L CaCO3	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Alkalinity (as CaCO3)	79.48	20.00	80.00	0	99.4	90	110			

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1508A58

15-Sep-15

Client: Western Refining Southwest, Inc.

Project: Down Gradient Wells 8-20-15

Sample ID	MB-20939		SampType:	MBLK		TestCode:	SM2540C MOD: Total Dissolved Solids				
Client ID:	PBW		Batch ID:	20939		RunNo:	28463				
Prep Date:	8/24/2015		Analysis Date:	8/26/2015		SeqNo:	860282		Units: mg/L		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Total Dissolved Solids	ND	20.0									

Sample ID	LCS-20939		SampType:	LCS		TestCode:	SM2540C MOD: Total Dissolved Solids				
Client ID:	LCSW		Batch ID:	20939		RunNo:	28463				
Prep Date:	8/24/2015		Analysis Date:	8/26/2015		SeqNo:	860283		Units: mg/L		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Total Dissolved Solids	1030	20.0	1000	0	103	80	120				

Sample ID	1508A58-002DMS		SampType: MS		TestCode: SM2540C MOD: Total Dissolved Solids					
Client ID:	MW-12		Batch ID: 20939		RunNo: 28463					
Prep Date:	8/24/2015		Analysis Date: 8/26/2015		SeqNo: 860297		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Dissolved Solids	2350	40.0	2000	304.0	102	80	120			D

Sample ID	1508A58-002DMSD		SampType:	MSD		TestCode:	SM2540C MOD: Total Dissolved Solids				
Client ID:	MW-12		Batch ID:	20939		RunNo:	28463				
Prep Date:	8/24/2015		Analysis Date:	8/26/2015		SeqNo:	860298		Units: mg/L		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Total Dissolved Solids	2360	40.0	2000	304.0	103	80	120	0.594	5	D	

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit

Sample Log-In Check List

Client Name: Western Refining Southw

Work Order Number: 1508A58

RcptNo: 1

Received by/date:

JA 08/21/15

Logged By:

Ashley Gallegos

8/21/2015 8:00:00 AM

AG

Completed By:

Ashley Gallegos

8/21/2015 9:02:41 AM

AG

Reviewed By:

CS 08/21/15

Chain of Custody

1. Custody seals intact on sample bottles?

Yes ☐

No ☐

Not Present ☒

2. Is Chain of Custody complete?

Yes ☒

No ☐

Not Present ☐

3. How was the sample delivered?

Courier

Log In

4. Was an attempt made to cool the samples?

Yes ☒

No ☐

NA ☐

5. Were all samples received at a temperature of $>0^{\circ}\text{C}$ to 6.0°C

Yes ☒

No ☐

NA ☐

6. Sample(s) in proper container(s)?

Yes ☒

No ☐

7. Sufficient sample volume for indicated test(s)?

Yes ☒

No ☐

8. Are samples (except VOA and ONG) properly preserved?

Yes ☒

No ☐

9. Was preservative added to bottles?

Yes ☐

No ☒

NA ☐

10. VOA vials have zero headspace?

Yes ☒

No ☐

No VOA Vials ☐

11. Were any sample containers received broken?

Yes ☐

No ☒

12. Does paperwork match bottle labels?

Yes ☒

No ☐

(Note discrepancies on chain of custody)

13. Are matrices correctly identified on Chain of Custody?

Yes ☒

No ☐

14. Is it clear what analyses were requested?

Yes ☒

No ☐

15. Were all holding times able to be met?

Yes ☒

No ☐

(If no, notify customer for authorization.)

of preserved bottles checked for pH: *21*
Adjusted? *2* or >12 unless noted
Checked by: *[Signature]*

Special Handling (if applicable)

16. Was client notified of all discrepancies with this order?

Yes ☐

No ☐

NA ☒

Person Notified:

Date

By Whom:

Via:

☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding:

Client Instructions:

17. Additional remarks:

18. Cooler Information

Cooler No	Temp $^{\circ}\text{C}$	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	1.0	Good	Yes			

TABLE 2
Analytical Methods and Target Analytes

VOCs (EPA Method 8260B) ⁽¹⁾
- Target List
Benzene
Toluene
Ethylbenzene
Xylenes
Methyl tert butyl ether (MTBE)
SVOCs - (EPA Method 8270)
- Method List
TPH-GRO (EPA Method 8015B)
- Gasoline Range Organics
TPH-DRO (EPA Method 8015B)
- Diesel Range Organics
- Motor Oil Range Organics
Total Carbon Dioxide (Laboratory Calculated)
- Dissolved CO ₂
Specific Conductivity (EPA Method 120.1 or field measurement)
- Specific conductance
TDS (EPA Method 160.1 or field measurement)
- Total dissolved solids
General Chemistry - Anions (EPA Method 300.0)
Fluoride
Chloride
Bromide
Nitrogen, Nitrite (as N)
Nitrogen, Nitrate (as N)
Phosphorous, Orthophosphate (As P)
Sulfate
General Chemistry - Alkalinity (EPA Method 310.1)
Alkalinity, Total
Carbonate
Bicarbonate

Total Recoverable Metals (EPA Method 6010B/7470)
- Target List (not applicable to River Terrace Sampling Events)
Arsenic
Barium
Cadmium
Chromium
Lead
Mercury
Selenium
Silver
- Target List (for River Terrace Sampling Events Only)
Lead
Mercury (DW-1 ONLY)
Dissolved Metals (EPA Method 6010B / 7470)
- Target List (for Refinery Complex, Outfalls, and River)
Arsenic
Barium
Cadmium
Calcium
Chromium
Copper
Iron
Lead
Magnesium
Manganese
Mercury
Potassium
Selenium
Silver
Sodium
Uranium
Zinc

TPH = total petroleum hydrocarbons
GRO = gasoline range organics
VOCs = volatile organic compounds
DRO = diesel range organics
TDS = total dissolved solids

NOTES:

- (1) VOCs Target List for River Terrace samples are analyzed by EPA Method 8021B per NMED's letter Approval with Direction dated June 16, 2009.
- (2) Target List for San Juan River Terrace Monitoring Wells and Piezometer Wells only, per the River Terrace Bioventing System Monitoring Plan.



Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

September 15, 2015

Kelly Robinson

Western Refining Southwest, Inc.

#50 CR 4990

Bloomfield, NM 87413

TEL: (505) 632-4166

FAX (505) 632-3911

RE: Refinery Wells 8-25-15

OrderNo.: 1508C52

Dear Kelly Robinson:

Hall Environmental Analysis Laboratory received 8 sample(s) on 8/26/2015 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to www.hallenvironmental.com or the state specific web sites. In order to properly interpret your results it is imperative that you review this report in its entirety. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. When necessary, data qualifiers are provided on both the sample analysis report and the QC summary report, both sections should be reviewed. All samples are reported, as received, unless otherwise indicated. Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH and residual chlorine are qualified as being analyzed outside of the recommended holding time.

Please don't hesitate to contact HEAL for any additional information or clarifications.

ADHS Cert #AZ0682 -- NMED-DWB Cert #NM9425 -- NMED-Micro Cert #NM0190

Sincerely,

A handwritten signature in black ink, appearing to read "Andy Freeman", with a stylized flourish at the end.

Andy Freeman

Laboratory Manager

4901 Hawkins NE

Albuquerque, NM 87109

Analytical Report

Lab Order: 1508C52

Hall Environmental Analysis Laboratory, Inc.

Date Reported: 9/15/2015

CLIENT: Western Refining Southwest, Inc.
Project: Refinery Wells 8-25-15
Lab ID: 1508C52-001A

Client Sample ID: MW-29
Collection Date: 8/25/2015 7:45:00 AM
Matrix: Aqueous

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES				Analyst: DJF			
Benzene	ND	1.0		µg/L	1	8/27/2015 2:45:16 AM	R28474
Toluene	ND	1.0		µg/L	1	8/27/2015 2:45:16 AM	R28474
Ethylbenzene	ND	1.0		µg/L	1	8/27/2015 2:45:16 AM	R28474
Methyl tert-butyl ether (MTBE)	ND	1.0		µg/L	1	8/27/2015 2:45:16 AM	R28474
1,2,4-Trimethylbenzene	ND	1.0		µg/L	1	8/27/2015 2:45:16 AM	R28474
1,3,5-Trimethylbenzene	ND	1.0		µg/L	1	8/27/2015 2:45:16 AM	R28474
1,2-Dichloroethane (EDC)	ND	1.0		µg/L	1	8/27/2015 2:45:16 AM	R28474
1,2-Dibromoethane (EDB)	ND	1.0		µg/L	1	8/27/2015 2:45:16 AM	R28474
Naphthalene	ND	2.0		µg/L	1	8/27/2015 2:45:16 AM	R28474
1-Methylnaphthalene	ND	4.0		µg/L	1	8/27/2015 2:45:16 AM	R28474
2-Methylnaphthalene	ND	4.0		µg/L	1	8/27/2015 2:45:16 AM	R28474
Acetone	ND	10		µg/L	1	8/27/2015 2:45:16 AM	R28474
Bromobenzene	ND	1.0		µg/L	1	8/27/2015 2:45:16 AM	R28474
Bromodichloromethane	ND	1.0		µg/L	1	8/27/2015 2:45:16 AM	R28474
Bromoform	ND	1.0		µg/L	1	8/27/2015 2:45:16 AM	R28474
Bromomethane	ND	3.0		µg/L	1	8/27/2015 2:45:16 AM	R28474
2-Butanone	ND	10		µg/L	1	8/27/2015 2:45:16 AM	R28474
Carbon disulfide	ND	10		µg/L	1	8/27/2015 2:45:16 AM	R28474
Carbon Tetrachloride	ND	1.0		µg/L	1	8/27/2015 2:45:16 AM	R28474
Chlorobenzene	ND	1.0		µg/L	1	8/27/2015 2:45:16 AM	R28474
Chloroethane	ND	2.0		µg/L	1	8/27/2015 2:45:16 AM	R28474
Chloroform	ND	1.0		µg/L	1	8/27/2015 2:45:16 AM	R28474
Chloromethane	ND	3.0		µg/L	1	8/27/2015 2:45:16 AM	R28474
2-Chlorotoluene	ND	1.0		µg/L	1	8/27/2015 2:45:16 AM	R28474
4-Chlorotoluene	ND	1.0		µg/L	1	8/27/2015 2:45:16 AM	R28474
cis-1,2-DCE	ND	1.0		µg/L	1	8/27/2015 2:45:16 AM	R28474
cis-1,3-Dichloropropene	ND	1.0		µg/L	1	8/27/2015 2:45:16 AM	R28474
1,2-Dibromo-3-chloropropane	ND	2.0		µg/L	1	8/27/2015 2:45:16 AM	R28474
Dibromochloromethane	ND	1.0		µg/L	1	8/27/2015 2:45:16 AM	R28474
Dibromomethane	ND	1.0		µg/L	1	8/27/2015 2:45:16 AM	R28474
1,2-Dichlorobenzene	ND	1.0		µg/L	1	8/27/2015 2:45:16 AM	R28474
1,3-Dichlorobenzene	ND	1.0		µg/L	1	8/27/2015 2:45:16 AM	R28474
1,4-Dichlorobenzene	ND	1.0		µg/L	1	8/27/2015 2:45:16 AM	R28474
Dichlorodifluoromethane	ND	1.0		µg/L	1	8/27/2015 2:45:16 AM	R28474
1,1-Dichloroethane	ND	1.0		µg/L	1	8/27/2015 2:45:16 AM	R28474
1,1-Dichloroethene	ND	1.0		µg/L	1	8/27/2015 2:45:16 AM	R28474
1,2-Dichloropropane	ND	1.0		µg/L	1	8/27/2015 2:45:16 AM	R28474
1,3-Dichloropropane	ND	1.0		µg/L	1	8/27/2015 2:45:16 AM	R28474
2,2-Dichloropropane	ND	2.0		µg/L	1	8/27/2015 2:45:16 AM	R28474
1,1-Dichloropropene	ND	1.0		µg/L	1	8/27/2015 2:45:16 AM	R28474
Hexachlorobutadiene	ND	1.0		µg/L	1	8/27/2015 2:45:16 AM	R28474

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
				Page 1 of 67

Analytical Report

Lab Order: 1508C52

Hall Environmental Analysis Laboratory, Inc.

Date Reported: 9/15/2015

CLIENT: Western Refining Southwest, Inc.
Project: Refinery Wells 8-25-15
Lab ID: 1508C52-001A

Client Sample ID: MW-29
Collection Date: 8/25/2015 7:45:00 AM
Matrix: Aqueous

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES				Analyst: DJF			
2-Hexanone	ND	10		µg/L	1	8/27/2015 2:45:16 AM	R28474
Isopropylbenzene	ND	1.0		µg/L	1	8/27/2015 2:45:16 AM	R28474
4-Isopropyltoluene	ND	1.0		µg/L	1	8/27/2015 2:45:16 AM	R28474
4-Methyl-2-pentanone	ND	10		µg/L	1	8/27/2015 2:45:16 AM	R28474
Methylene Chloride	ND	3.0		µg/L	1	8/27/2015 2:45:16 AM	R28474
n-Butylbenzene	ND	3.0		µg/L	1	8/27/2015 2:45:16 AM	R28474
n-Propylbenzene	ND	1.0		µg/L	1	8/27/2015 2:45:16 AM	R28474
sec-Butylbenzene	ND	1.0		µg/L	1	8/27/2015 2:45:16 AM	R28474
Styrene	ND	1.0		µg/L	1	8/27/2015 2:45:16 AM	R28474
tert-Butylbenzene	ND	1.0		µg/L	1	8/27/2015 2:45:16 AM	R28474
1,1,1,2-Tetrachloroethane	ND	1.0		µg/L	1	8/27/2015 2:45:16 AM	R28474
1,1,2,2-Tetrachloroethane	ND	2.0		µg/L	1	8/27/2015 2:45:16 AM	R28474
Tetrachloroethene (PCE)	ND	1.0		µg/L	1	8/27/2015 2:45:16 AM	R28474
trans-1,2-DCE	ND	1.0		µg/L	1	8/27/2015 2:45:16 AM	R28474
trans-1,3-Dichloropropene	ND	1.0		µg/L	1	8/27/2015 2:45:16 AM	R28474
1,2,3-Trichlorobenzene	ND	1.0		µg/L	1	8/27/2015 2:45:16 AM	R28474
1,2,4-Trichlorobenzene	ND	1.0		µg/L	1	8/27/2015 2:45:16 AM	R28474
1,1,1-Trichloroethane	ND	1.0		µg/L	1	8/27/2015 2:45:16 AM	R28474
1,1,2-Trichloroethane	ND	1.0		µg/L	1	8/27/2015 2:45:16 AM	R28474
Trichloroethene (TCE)	ND	1.0		µg/L	1	8/27/2015 2:45:16 AM	R28474
Trichlorofluoromethane	ND	1.0		µg/L	1	8/27/2015 2:45:16 AM	R28474
1,2,3-Trichloropropane	ND	2.0		µg/L	1	8/27/2015 2:45:16 AM	R28474
Vinyl chloride	ND	1.0		µg/L	1	8/27/2015 2:45:16 AM	R28474
Xylenes, Total	ND	1.5		µg/L	1	8/27/2015 2:45:16 AM	R28474
Surr: 1,2-Dichloroethane-d4	90.8	70-130		%REC	1	8/27/2015 2:45:16 AM	R28474
Surr: 4-Bromofluorobenzene	104	70-130		%REC	1	8/27/2015 2:45:16 AM	R28474
Surr: Dibromofluoromethane	102	70-130		%REC	1	8/27/2015 2:45:16 AM	R28474
Surr: Toluene-d8	96.5	70-130		%REC	1	8/27/2015 2:45:16 AM	R28474

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
				Page 2 of 67

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order: 1508C52

Date Reported: 9/15/2015

CLIENT: Western Refining Southwest, Inc.
Project: Refinery Wells 8-25-15
Lab ID: 1508C52-001B

Client Sample ID: MW-29
Collection Date: 8/25/2015 7:45:00 AM
Matrix: Aqueous

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	ND	0.050		mg/L	1	8/26/2015 8:30:50 PM	R28483
Surr: BFB	82.6	57.8-137		%REC	1	8/26/2015 8:30:50 PM	R28483

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order: 1508C52

Date Reported: 9/15/2015

CLIENT: Western Refining Southwest, Inc.
Project: Refinery Wells 8-25-15
Lab ID: 1508C52-001C

Client Sample ID: MW-29
Collection Date: 8/25/2015 7:45:00 AM
Matrix: Aqueous

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D: DIESEL RANGE							Analyst: TOM
Diesel Range Organics (DRO)	ND	0.20		mg/L	1	8/26/2015 5:03:28 PM	20987
Motor Oil Range Organics (MRO)	ND	2.5		mg/L	1	8/26/2015 5:03:28 PM	20987
Surr: DNOP	109	84.6-165		%REC	1	8/26/2015 5:03:28 PM	20987

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order: 1508C52

Date Reported: 9/15/2015

CLIENT: Western Refining Southwest, Inc.
Project: Refinery Wells 8-25-15
Lab ID: 1508C52-001D

Client Sample ID: MW-29
Collection Date: 8/25/2015 7:45:00 AM
Matrix: Aqueous

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 7470: MERCURY							Analyst: MED
Mercury	ND	0.00020		mg/L	1	9/2/2015 12:34:50 PM	21096
EPA 6010B: TOTAL RECOVERABLE METALS							Analyst: MED
Arsenic	ND	0.020		mg/L	1	9/2/2015 9:42:58 AM	21082
Barium	0.041	0.020		mg/L	1	9/2/2015 9:42:58 AM	21082
Cadmium	ND	0.0020		mg/L	1	9/2/2015 9:42:58 AM	21082
Chromium	ND	0.0060		mg/L	1	9/2/2015 9:42:58 AM	21082
Lead	ND	0.0050		mg/L	1	9/2/2015 9:42:58 AM	21082
Selenium	ND	0.050		mg/L	1	9/2/2015 9:42:58 AM	21082
Silver	ND	0.0050		mg/L	1	9/2/2015 9:42:58 AM	21082

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
				Page 5 of 67

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order: 1508C52

Date Reported: 9/15/2015

CLIENT: Western Refining Southwest, Inc.
Project: Refinery Wells 8-25-15
Lab ID: 1508C52-001E

Client Sample ID: MW-29
Collection Date: 8/25/2015 7:45:00 AM
Matrix: Aqueous

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
CARBON DIOXIDE							Analyst: JRR
Total Carbon Dioxide	230	1.0	H	mg CO2/L	1	8/27/2015 4:39:05 PM	R28535
EPA METHOD 300.0: ANIONS							Analyst: LGT
Fluoride	0.26	0.10		mg/L	1	8/26/2015 12:25:57 PM	R28493
Chloride	33	10		mg/L	20	8/26/2015 1:03:11 PM	R28493
Nitrogen, Nitrite (As N)	ND	0.10		mg/L	1	8/26/2015 12:25:57 PM	R28493
Bromide	0.34	0.10		mg/L	1	8/26/2015 12:25:57 PM	R28493
Nitrogen, Nitrate (As N)	0.50	0.10		mg/L	1	8/26/2015 12:25:57 PM	R28493
Phosphorus, Orthophosphate (As P)	ND	0.50		mg/L	1	8/26/2015 12:25:57 PM	R28493
Sulfate	160	10		mg/L	20	8/26/2015 1:03:11 PM	R28493
SM2510B: SPECIFIC CONDUCTANCE							Analyst: JRR
Conductivity	920	0.010		µmhos/cm	1	8/27/2015 4:39:05 PM	R28535
SM2320B: ALKALINITY							Analyst: JRR
Bicarbonate (As CaCO3)	250.8	20.00		mg/L CaCO3	1	8/27/2015 4:39:05 PM	R28535
Carbonate (As CaCO3)	ND	2.000		mg/L CaCO3	1	8/27/2015 4:39:05 PM	R28535
Total Alkalinity (as CaCO3)	250.8	20.00		mg/L CaCO3	1	8/27/2015 4:39:05 PM	R28535
SM2540C MOD: TOTAL DISSOLVED SOLIDS							Analyst: KS
Total Dissolved Solids	582	40.0	*D	mg/L	1	8/31/2015 5:27:00 PM	21029

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order: 1508C52

Date Reported: 9/15/2015

CLIENT: Western Refining Southwest, Inc.
Project: Refinery Wells 8-25-15
Lab ID: 1508C52-001F

Client Sample ID: MW-29
Collection Date: 8/25/2015 7:45:00 AM
Matrix: Aqueous

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 6010B: DISSOLVED METALS							Analyst: MED
Arsenic	ND	0.020		mg/L	1	8/28/2015 2:03:46 PM	A28540
Barium	ND	0.020		mg/L	1	8/28/2015 2:03:46 PM	A28540
Cadmium	ND	0.0020		mg/L	1	8/28/2015 2:03:46 PM	A28540
Calcium	74	1.0		mg/L	1	8/28/2015 2:03:46 PM	A28540
Chromium	ND	0.0060		mg/L	1	8/28/2015 2:03:46 PM	A28540
Copper	ND	0.0060		mg/L	1	8/28/2015 2:03:46 PM	A28540
Iron	ND	0.020		mg/L	1	8/28/2015 2:03:46 PM	A28540
Lead	ND	0.0050		mg/L	1	8/28/2015 2:03:46 PM	A28540
Magnesium	17	1.0		mg/L	1	8/28/2015 2:03:46 PM	A28540
Manganese	1.3	0.010		mg/L	5	8/28/2015 3:12:19 PM	A28540
Potassium	2.2	1.0		mg/L	1	8/28/2015 2:03:46 PM	A28540
Selenium	ND	0.050		mg/L	1	8/28/2015 2:03:46 PM	A28540
Silver	ND	0.0050		mg/L	1	8/28/2015 2:03:46 PM	A28540
Sodium	99	1.0		mg/L	1	8/28/2015 2:03:46 PM	A28540
Uranium	ND	0.10		mg/L	1	8/28/2015 2:03:46 PM	A28540
Zinc	0.022	0.020		mg/L	1	8/28/2015 2:03:46 PM	A28540

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
				Page 7 of 67

Analytical Report

Lab Order: 1508C52

Hall Environmental Analysis Laboratory, Inc.

Date Reported: 9/15/2015

CLIENT: Western Refining Southwest, Inc.
Project: Refinery Wells 8-25-15
Lab ID: 1508C52-002A

Client Sample ID: MW-30
Collection Date: 8/25/2015 8:00:00 AM
Matrix: Aqueous

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES				Analyst: DJF			
Benzene	4200	100		µg/L	100	8/27/2015 3:12:40 AM	R28474
Toluene	13000	500		µg/L	500	8/27/2015 12:19:13 PM	R28514
Ethylbenzene	4000	100		µg/L	100	8/27/2015 3:12:40 AM	R28474
Methyl tert-butyl ether (MTBE)	ND	100		µg/L	100	8/27/2015 3:12:40 AM	R28474
1,2,4-Trimethylbenzene	3000	100		µg/L	100	8/27/2015 3:12:40 AM	R28474
1,3,5-Trimethylbenzene	740	100		µg/L	100	8/27/2015 3:12:40 AM	R28474
1,2-Dichloroethane (EDC)	ND	100		µg/L	100	8/27/2015 3:12:40 AM	R28474
1,2-Dibromoethane (EDB)	ND	100		µg/L	100	8/27/2015 3:12:40 AM	R28474
Naphthalene	600	200		µg/L	100	8/27/2015 3:12:40 AM	R28474
1-Methylnaphthalene	ND	400		µg/L	100	8/27/2015 3:12:40 AM	R28474
2-Methylnaphthalene	ND	400		µg/L	100	8/27/2015 3:12:40 AM	R28474
Acetone	ND	1000		µg/L	100	8/27/2015 3:12:40 AM	R28474
Bromobenzene	ND	100		µg/L	100	8/27/2015 3:12:40 AM	R28474
Bromodichloromethane	ND	100		µg/L	100	8/27/2015 3:12:40 AM	R28474
Bromoform	ND	100		µg/L	100	8/27/2015 3:12:40 AM	R28474
Bromomethane	ND	300		µg/L	100	8/27/2015 3:12:40 AM	R28474
2-Butanone	ND	1000		µg/L	100	8/27/2015 3:12:40 AM	R28474
Carbon disulfide	ND	1000		µg/L	100	8/27/2015 3:12:40 AM	R28474
Carbon Tetrachloride	ND	100		µg/L	100	8/27/2015 3:12:40 AM	R28474
Chlorobenzene	ND	100		µg/L	100	8/27/2015 3:12:40 AM	R28474
Chloroethane	ND	200		µg/L	100	8/27/2015 3:12:40 AM	R28474
Chloroform	ND	100		µg/L	100	8/27/2015 3:12:40 AM	R28474
Chloromethane	ND	300		µg/L	100	8/27/2015 3:12:40 AM	R28474
2-Chlorotoluene	ND	100		µg/L	100	8/27/2015 3:12:40 AM	R28474
4-Chlorotoluene	ND	100		µg/L	100	8/27/2015 3:12:40 AM	R28474
cis-1,2-DCE	ND	100		µg/L	100	8/27/2015 3:12:40 AM	R28474
cis-1,3-Dichloropropene	ND	100		µg/L	100	8/27/2015 3:12:40 AM	R28474
1,2-Dibromo-3-chloropropane	ND	200		µg/L	100	8/27/2015 3:12:40 AM	R28474
Dibromochloromethane	ND	100		µg/L	100	8/27/2015 3:12:40 AM	R28474
Dibromomethane	ND	100		µg/L	100	8/27/2015 3:12:40 AM	R28474
1,2-Dichlorobenzene	ND	100		µg/L	100	8/27/2015 3:12:40 AM	R28474
1,3-Dichlorobenzene	ND	100		µg/L	100	8/27/2015 3:12:40 AM	R28474
1,4-Dichlorobenzene	ND	100		µg/L	100	8/27/2015 3:12:40 AM	R28474
Dichlorodifluoromethane	ND	100		µg/L	100	8/27/2015 3:12:40 AM	R28474
1,1-Dichloroethane	ND	100		µg/L	100	8/27/2015 3:12:40 AM	R28474
1,1-Dichloroethene	ND	100		µg/L	100	8/27/2015 3:12:40 AM	R28474
1,2-Dichloropropane	ND	100		µg/L	100	8/27/2015 3:12:40 AM	R28474
1,3-Dichloropropane	ND	100		µg/L	100	8/27/2015 3:12:40 AM	R28474
2,2-Dichloropropane	ND	200		µg/L	100	8/27/2015 3:12:40 AM	R28474
1,1-Dichloropropene	ND	100		µg/L	100	8/27/2015 3:12:40 AM	R28474
Hexachlorobutadiene	ND	100		µg/L	100	8/27/2015 3:12:40 AM	R28474

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Analytical Report

Lab Order: 1508C52

Hall Environmental Analysis Laboratory, Inc.

Date Reported: 9/15/2015

CLIENT: Western Refining Southwest, Inc.
Project: Refinery Wells 8-25-15
Lab ID: 1508C52-002A

Client Sample ID: MW-30
Collection Date: 8/25/2015 8:00:00 AM
Matrix: Aqueous

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES				Analyst: DJF			
2-Hexanone	ND	1000		µg/L	100	8/27/2015 3:12:40 AM	R28474
Isopropylbenzene	110	100		µg/L	100	8/27/2015 3:12:40 AM	R28474
4-Isopropyltoluene	ND	100		µg/L	100	8/27/2015 3:12:40 AM	R28474
4-Methyl-2-pentanone	ND	1000		µg/L	100	8/27/2015 3:12:40 AM	R28474
Methylene Chloride	ND	300		µg/L	100	8/27/2015 3:12:40 AM	R28474
n-Butylbenzene	ND	300		µg/L	100	8/27/2015 3:12:40 AM	R28474
n-Propylbenzene	470	100		µg/L	100	8/27/2015 3:12:40 AM	R28474
sec-Butylbenzene	ND	100		µg/L	100	8/27/2015 3:12:40 AM	R28474
Styrene	ND	100		µg/L	100	8/27/2015 3:12:40 AM	R28474
tert-Butylbenzene	ND	100		µg/L	100	8/27/2015 3:12:40 AM	R28474
1,1,1,2-Tetrachloroethane	ND	100		µg/L	100	8/27/2015 3:12:40 AM	R28474
1,1,2,2-Tetrachloroethane	ND	200		µg/L	100	8/27/2015 3:12:40 AM	R28474
Tetrachloroethene (PCE)	ND	100		µg/L	100	8/27/2015 3:12:40 AM	R28474
trans-1,2-DCE	ND	100		µg/L	100	8/27/2015 3:12:40 AM	R28474
trans-1,3-Dichloropropene	ND	100		µg/L	100	8/27/2015 3:12:40 AM	R28474
1,2,3-Trichlorobenzene	ND	100		µg/L	100	8/27/2015 3:12:40 AM	R28474
1,2,4-Trichlorobenzene	ND	100		µg/L	100	8/27/2015 3:12:40 AM	R28474
1,1,1-Trichloroethane	ND	100		µg/L	100	8/27/2015 3:12:40 AM	R28474
1,1,2-Trichloroethane	ND	100		µg/L	100	8/27/2015 3:12:40 AM	R28474
Trichloroethene (TCE)	ND	100		µg/L	100	8/27/2015 3:12:40 AM	R28474
Trichlorofluoromethane	ND	100		µg/L	100	8/27/2015 3:12:40 AM	R28474
1,2,3-Trichloropropane	ND	200		µg/L	100	8/27/2015 3:12:40 AM	R28474
Vinyl chloride	ND	100		µg/L	100	8/27/2015 3:12:40 AM	R28474
Xylenes, Total	16000	150		µg/L	100	8/27/2015 3:12:40 AM	R28474
Surr: 1,2-Dichloroethane-d4	89.4	70-130		%REC	100	8/27/2015 3:12:40 AM	R28474
Surr: 4-Bromofluorobenzene	101	70-130		%REC	100	8/27/2015 3:12:40 AM	R28474
Surr: Dibromofluoromethane	105	70-130		%REC	100	8/27/2015 3:12:40 AM	R28474
Surr: Toluene-d8	90.8	70-130		%REC	100	8/27/2015 3:12:40 AM	R28474

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
				Page 9 of 67

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order: 1508C52

Date Reported: 9/15/2015

CLIENT: Western Refining Southwest, Inc.
Project: Refinery Wells 8-25-15
Lab ID: 1508C52-002B

Client Sample ID: MW-30
Collection Date: 8/25/2015 8:00:00 AM
Matrix: Aqueous

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	120	5.0		mg/L	100	8/26/2015 5:12:06 PM	R28483
Surr: BFB	96.7	57.8-137		%REC	100	8/26/2015 5:12:06 PM	R28483

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order: 1508C52

Date Reported: 9/15/2015

CLIENT: Western Refining Southwest, Inc.
Project: Refinery Wells 8-25-15
Lab ID: 1508C52-002C

Client Sample ID: MW-30
Collection Date: 8/25/2015 8:00:00 AM
Matrix: Aqueous

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D: DIESEL RANGE							Analyst: TOM
Diesel Range Organics (DRO)	7.7	0.20		mg/L	1	8/26/2015 6:07:24 PM	20987
Motor Oil Range Organics (MRO)	ND	2.5		mg/L	1	8/26/2015 6:07:24 PM	20987
Surr: DNOP	102	84.6-165		%REC	1	8/26/2015 6:07:24 PM	20987

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order: 1508C52

Date Reported: 9/15/2015

CLIENT: Western Refining Southwest, Inc.
Project: Refinery Wells 8-25-15
Lab ID: 1508C52-002D

Client Sample ID: MW-30
Collection Date: 8/25/2015 8:00:00 AM
Matrix: Aqueous

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 7470: MERCURY							Analyst: MED
Mercury	ND	0.00020		mg/L	1	9/2/2015 12:40:59 PM	21096
EPA 6010B: TOTAL RECOVERABLE METALS							Analyst: MED
Arsenic	ND	0.020		mg/L	1	9/2/2015 9:44:36 AM	21082
Barium	1.1	0.040		mg/L	2	9/2/2015 10:12:22 AM	21082
Cadmium	ND	0.0020		mg/L	1	9/2/2015 9:44:36 AM	21082
Chromium	ND	0.0060		mg/L	1	9/2/2015 9:44:36 AM	21082
Lead	ND	0.0050		mg/L	1	9/2/2015 9:44:36 AM	21082
Selenium	ND	0.050		mg/L	1	9/2/2015 9:44:36 AM	21082
Silver	ND	0.0050		mg/L	1	9/2/2015 9:44:36 AM	21082

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Analytical ReportLab Order: **1508C52**Date Reported: **9/15/2015****Hall Environmental Analysis Laboratory, Inc.**

CLIENT: Western Refining Southwest, Inc.
Project: Refinery Wells 8-25-15
Lab ID: 1508C52-002E

Client Sample ID: MW-30
Collection Date: 8/25/2015 8:00:00 AM
Matrix: Aqueous

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
CARBON DIOXIDE							Analyst: JRR
Total Carbon Dioxide	1400	2.5	H	mg CO2/L	2.5	8/28/2015 12:13:34 PM	R28559
EPA METHOD 300.0: ANIONS							Analyst: LGT
Fluoride	ND	0.10		mg/L	1	8/26/2015 1:15:36 PM	R28493
Chloride	230	10		mg/L	20	8/26/2015 1:28:00 PM	R28493
Nitrogen, Nitrite (As N)	ND	2.0		mg/L	20	8/26/2015 1:28:00 PM	R28493
Bromide	ND	0.10		mg/L	1	8/26/2015 1:15:36 PM	R28493
Nitrogen, Nitrate (As N)	1.0	0.10		mg/L	1	8/26/2015 1:15:36 PM	R28493
Phosphorus, Orthophosphate (As P)	ND	0.50		mg/L	1	8/26/2015 1:15:36 PM	R28493
Sulfate	36	0.50		mg/L	1	8/26/2015 1:15:36 PM	R28493
SM2510B: SPECIFIC CONDUCTANCE							Analyst: JRR
Conductivity	3200	0.010		µmhos/cm	1	8/27/2015 4:51:08 PM	R28535
SM2320B: ALKALINITY							Analyst: JRR
Bicarbonate (As CaCO3)	1493	50.00		mg/L CaCO3	2.5	8/28/2015 12:13:34 PM	R28559
Carbonate (As CaCO3)	ND	5.000		mg/L CaCO3	2.5	8/28/2015 12:13:34 PM	R28559
Total Alkalinity (as CaCO3)	1493	50.00		mg/L CaCO3	2.5	8/28/2015 12:13:34 PM	R28559
SM2540C MOD: TOTAL DISSOLVED SOLIDS							Analyst: KS
Total Dissolved Solids	2110	100	*D	mg/L	1	8/31/2015 5:27:00 PM	21029

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Analytical ReportLab Order: **1508C52**Date Reported: **9/15/2015****Hall Environmental Analysis Laboratory, Inc.****CLIENT:** Western Refining Southwest, Inc.**Client Sample ID:** MW-30**Project:** Refinery Wells 8-25-15**Collection Date:** 8/25/2015 8:00:00 AM**Lab ID:** 1508C52-002F**Matrix:** Aqueous

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 6010B: DISSOLVED METALS							Analyst: MED
Arsenic	ND	0.020		mg/L	1	8/28/2015 2:05:29 PM	A28540
Barium	1.0	0.10		mg/L	5	8/28/2015 3:14:09 PM	A28540
Cadmium	ND	0.0020		mg/L	1	8/28/2015 2:05:29 PM	A28540
Calcium	160	5.0		mg/L	5	8/28/2015 3:14:09 PM	A28540
Chromium	ND	0.0060		mg/L	1	8/28/2015 2:05:29 PM	A28540
Copper	ND	0.0060		mg/L	1	8/28/2015 2:05:29 PM	A28540
Iron	1.5	0.10		mg/L	5	8/28/2015 3:14:09 PM	A28540
Lead	0.0074	0.0050		mg/L	1	8/28/2015 2:05:29 PM	A28540
Magnesium	52	1.0		mg/L	1	8/28/2015 2:05:29 PM	A28540
Manganese	2.9	0.010		mg/L	5	8/28/2015 3:14:09 PM	A28540
Potassium	3.5	1.0		mg/L	1	8/28/2015 2:05:29 PM	A28540
Selenium	ND	0.050		mg/L	1	8/28/2015 2:05:29 PM	A28540
Silver	ND	0.0050		mg/L	1	8/28/2015 2:05:29 PM	A28540
Sodium	560	10		mg/L	10	8/28/2015 3:16:03 PM	A28540
Uranium	ND	0.10		mg/L	1	8/28/2015 2:05:29 PM	A28540
Zinc	0.034	0.020		mg/L	1	8/28/2015 2:05:29 PM	A28540

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
				Page 14 of 67

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order: 1508C52

Date Reported: 9/15/2015

CLIENT: Western Refining Southwest, Inc.
Project: Refinery Wells 8-25-15
Lab ID: 1508C52-003A

Client Sample ID: MW-44
Collection Date: 8/25/2015 8:20:00 AM
Matrix: Aqueous

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: DJF
Benzene	ND	2.0	D	µg/L	2	8/27/2015 3:40:03 AM	R28474
Toluene	ND	2.0	D	µg/L	2	8/27/2015 3:40:03 AM	R28474
Ethylbenzene	ND	2.0	D	µg/L	2	8/27/2015 3:40:03 AM	R28474
Methyl tert-butyl ether (MTBE)	ND	2.0	D	µg/L	2	8/27/2015 3:40:03 AM	R28474
1,2,4-Trimethylbenzene	ND	2.0	D	µg/L	2	8/27/2015 3:40:03 AM	R28474
1,3,5-Trimethylbenzene	ND	2.0	D	µg/L	2	8/27/2015 3:40:03 AM	R28474
1,2-Dichloroethane (EDC)	ND	2.0	D	µg/L	2	8/27/2015 3:40:03 AM	R28474
1,2-Dibromoethane (EDB)	ND	2.0	D	µg/L	2	8/27/2015 3:40:03 AM	R28474
Naphthalene	ND	4.0	D	µg/L	2	8/27/2015 3:40:03 AM	R28474
1-Methylnaphthalene	ND	8.0	D	µg/L	2	8/27/2015 3:40:03 AM	R28474
2-Methylnaphthalene	ND	8.0	D	µg/L	2	8/27/2015 3:40:03 AM	R28474
Acetone	ND	20	D	µg/L	2	8/27/2015 3:40:03 AM	R28474
Bromobenzene	ND	2.0	D	µg/L	2	8/27/2015 3:40:03 AM	R28474
Bromodichloromethane	ND	2.0	D	µg/L	2	8/27/2015 3:40:03 AM	R28474
Bromoform	ND	2.0	D	µg/L	2	8/27/2015 3:40:03 AM	R28474
Bromomethane	ND	6.0	D	µg/L	2	8/27/2015 3:40:03 AM	R28474
2-Butanone	ND	20	D	µg/L	2	8/27/2015 3:40:03 AM	R28474
Carbon disulfide	ND	20	D	µg/L	2	8/27/2015 3:40:03 AM	R28474
Carbon Tetrachloride	ND	2.0	D	µg/L	2	8/27/2015 3:40:03 AM	R28474
Chlorobenzene	ND	2.0	D	µg/L	2	8/27/2015 3:40:03 AM	R28474
Chloroethane	ND	4.0	D	µg/L	2	8/27/2015 3:40:03 AM	R28474
Chloroform	ND	2.0	D	µg/L	2	8/27/2015 3:40:03 AM	R28474
Chloromethane	ND	6.0	D	µg/L	2	8/27/2015 3:40:03 AM	R28474
2-Chlorotoluene	ND	2.0	D	µg/L	2	8/27/2015 3:40:03 AM	R28474
4-Chlorotoluene	ND	2.0	D	µg/L	2	8/27/2015 3:40:03 AM	R28474
cis-1,2-DCE	ND	2.0	D	µg/L	2	8/27/2015 3:40:03 AM	R28474
cis-1,3-Dichloropropene	ND	2.0	D	µg/L	2	8/27/2015 3:40:03 AM	R28474
1,2-Dibromo-3-chloropropane	ND	4.0	D	µg/L	2	8/27/2015 3:40:03 AM	R28474
Dibromochloromethane	ND	2.0	D	µg/L	2	8/27/2015 3:40:03 AM	R28474
Dibromomethane	ND	2.0	D	µg/L	2	8/27/2015 3:40:03 AM	R28474
1,2-Dichlorobenzene	ND	2.0	D	µg/L	2	8/27/2015 3:40:03 AM	R28474
1,3-Dichlorobenzene	ND	2.0	D	µg/L	2	8/27/2015 3:40:03 AM	R28474
1,4-Dichlorobenzene	ND	2.0	D	µg/L	2	8/27/2015 3:40:03 AM	R28474
Dichlorodifluoromethane	ND	2.0	D	µg/L	2	8/27/2015 3:40:03 AM	R28474
1,1-Dichloroethane	ND	2.0	D	µg/L	2	8/27/2015 3:40:03 AM	R28474
1,1-Dichloroethene	ND	2.0	D	µg/L	2	8/27/2015 3:40:03 AM	R28474
1,2-Dichloropropane	ND	2.0	D	µg/L	2	8/27/2015 3:40:03 AM	R28474
1,3-Dichloropropane	ND	2.0	D	µg/L	2	8/27/2015 3:40:03 AM	R28474
2,2-Dichloropropane	ND	4.0	D	µg/L	2	8/27/2015 3:40:03 AM	R28474
1,1-Dichloropropene	ND	2.0	D	µg/L	2	8/27/2015 3:40:03 AM	R28474
Hexachlorobutadiene	ND	2.0	D	µg/L	2	8/27/2015 3:40:03 AM	R28474

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order: 1508C52

Date Reported: 9/15/2015

CLIENT: Western Refining Southwest, Inc.
Project: Refinery Wells 8-25-15
Lab ID: 1508C52-003A

Client Sample ID: MW-44
Collection Date: 8/25/2015 8:20:00 AM
Matrix: Aqueous

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES				Analyst: DJF			
2-Hexanone	ND	20	D	µg/L	2	8/27/2015 3:40:03 AM	R28474
Isopropylbenzene	ND	2.0	D	µg/L	2	8/27/2015 3:40:03 AM	R28474
4-Isopropyltoluene	ND	2.0	D	µg/L	2	8/27/2015 3:40:03 AM	R28474
4-Methyl-2-pentanone	ND	20	D	µg/L	2	8/27/2015 3:40:03 AM	R28474
Methylene Chloride	ND	6.0	D	µg/L	2	8/27/2015 3:40:03 AM	R28474
n-Butylbenzene	ND	6.0	D	µg/L	2	8/27/2015 3:40:03 AM	R28474
n-Propylbenzene	ND	2.0	D	µg/L	2	8/27/2015 3:40:03 AM	R28474
sec-Butylbenzene	ND	2.0	D	µg/L	2	8/27/2015 3:40:03 AM	R28474
Styrene	ND	2.0	D	µg/L	2	8/27/2015 3:40:03 AM	R28474
tert-Butylbenzene	ND	2.0	D	µg/L	2	8/27/2015 3:40:03 AM	R28474
1,1,1,2-Tetrachloroethane	ND	2.0	D	µg/L	2	8/27/2015 3:40:03 AM	R28474
1,1,2,2-Tetrachloroethane	ND	4.0	D	µg/L	2	8/27/2015 3:40:03 AM	R28474
Tetrachloroethene (PCE)	ND	2.0	D	µg/L	2	8/27/2015 3:40:03 AM	R28474
trans-1,2-DCE	ND	2.0	D	µg/L	2	8/27/2015 3:40:03 AM	R28474
trans-1,3-Dichloropropene	ND	2.0	D	µg/L	2	8/27/2015 3:40:03 AM	R28474
1,2,3-Trichlorobenzene	ND	2.0	D	µg/L	2	8/27/2015 3:40:03 AM	R28474
1,2,4-Trichlorobenzene	ND	2.0	D	µg/L	2	8/27/2015 3:40:03 AM	R28474
1,1,1-Trichloroethane	ND	2.0	D	µg/L	2	8/27/2015 3:40:03 AM	R28474
1,1,2-Trichloroethane	ND	2.0	D	µg/L	2	8/27/2015 3:40:03 AM	R28474
Trichloroethene (TCE)	ND	2.0	D	µg/L	2	8/27/2015 3:40:03 AM	R28474
Trichlorofluoromethane	ND	2.0	D	µg/L	2	8/27/2015 3:40:03 AM	R28474
1,2,3-Trichloropropane	ND	4.0	D	µg/L	2	8/27/2015 3:40:03 AM	R28474
Vinyl chloride	ND	2.0	D	µg/L	2	8/27/2015 3:40:03 AM	R28474
Xylenes, Total	ND	3.0	D	µg/L	2	8/27/2015 3:40:03 AM	R28474
Surr: 1,2-Dichloroethane-d4	91.5	70-130	D	%REC	2	8/27/2015 3:40:03 AM	R28474
Surr: 4-Bromofluorobenzene	101	70-130	D	%REC	2	8/27/2015 3:40:03 AM	R28474
Surr: Dibromofluoromethane	102	70-130	D	%REC	2	8/27/2015 3:40:03 AM	R28474
Surr: Toluene-d8	99.1	70-130	D	%REC	2	8/27/2015 3:40:03 AM	R28474

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
				Page 16 of 67

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order: 1508C52

Date Reported: 9/15/2015

CLIENT: Western Refining Southwest, Inc.
Project: Refinery Wells 8-25-15
Lab ID: 1508C52-003B

Client Sample ID: MW-44
Collection Date: 8/25/2015 8:20:00 AM
Matrix: Aqueous

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	ND	0.050		mg/L	1	8/26/2015 8:55:38 PM	R28483
Surr: BFB	83.2	57.8-137		%REC	1	8/26/2015 8:55:38 PM	R28483

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order: 1508C52

Date Reported: 9/15/2015

CLIENT: Western Refining Southwest, Inc.
Project: Refinery Wells 8-25-15
Lab ID: 1508C52-003C

Client Sample ID: MW-44
Collection Date: 8/25/2015 8:20:00 AM
Matrix: Aqueous

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D: DIESEL RANGE							Analyst: TOM
Diesel Range Organics (DRO)	ND	0.20		mg/L	1	8/26/2015 6:28:55 PM	20987
Motor Oil Range Organics (MRO)	ND	2.5		mg/L	1	8/26/2015 6:28:55 PM	20987
Surr: DNOP	99.7	84.6-165		%REC	1	8/26/2015 6:28:55 PM	20987

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order: 1508C52

Date Reported: 9/15/2015

CLIENT: Western Refining Southwest, Inc.
Project: Refinery Wells 8-25-15
Lab ID: 1508C52-003D

Client Sample ID: MW-44
Collection Date: 8/25/2015 8:20:00 AM
Matrix: Aqueous

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 7470: MERCURY							Analyst: MED
Mercury	ND	0.00020		mg/L	1	9/2/2015 12:43:02 PM	21096
EPA 6010B: TOTAL RECOVERABLE METALS							Analyst: MED
Arsenic	ND	0.020		mg/L	1	9/2/2015 9:46:05 AM	21082
Barium	0.19	0.020		mg/L	1	9/2/2015 9:46:05 AM	21082
Cadmium	ND	0.0020		mg/L	1	9/2/2015 9:46:05 AM	21082
Chromium	0.029	0.0060		mg/L	1	9/2/2015 9:46:05 AM	21082
Lead	0.0053	0.0050		mg/L	1	9/2/2015 9:46:05 AM	21082
Selenium	ND	0.050		mg/L	1	9/2/2015 9:46:05 AM	21082
Silver	ND	0.0050		mg/L	1	9/2/2015 9:46:05 AM	21082

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order: 1508C52

Date Reported: 9/15/2015

CLIENT: Western Refining Southwest, Inc.
Project: Refinery Wells 8-25-15
Lab ID: 1508C52-003E

Client Sample ID: MW-44
Collection Date: 8/25/2015 8:20:00 AM
Matrix: Aqueous

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
CARBON DIOXIDE							Analyst: JRR
Total Carbon Dioxide	340	1.0	H	mg CO2/L	1	8/27/2015 5:29:25 PM	R28535
EPA METHOD 300.0: ANIONS							Analyst: LGT
Fluoride	ND	0.10		mg/L	1	8/26/2015 1:40:24 PM	R28493
Chloride	55	10		mg/L	20	8/26/2015 1:52:49 PM	R28493
Nitrogen, Nitrite (As N)	ND	0.10		mg/L	1	8/26/2015 1:40:24 PM	R28493
Bromide	0.47	0.10		mg/L	1	8/26/2015 1:40:24 PM	R28493
Nitrogen, Nitrate (As N)	0.13	0.10		mg/L	1	8/26/2015 1:40:24 PM	R28493
Phosphorus, Orthophosphate (As P)	ND	10		mg/L	20	8/26/2015 1:52:49 PM	R28493
Sulfate	3000	50	*	mg/L	100	9/1/2015 8:19:37 PM	R28611
SM2510B: SPECIFIC CONDUCTANCE							Analyst: JRR
Conductivity	5500	0.010		µmhos/cm	1	8/27/2015 5:29:25 PM	R28535
SM2320B: ALKALINITY							Analyst: JRR
Bicarbonate (As CaCO3)	377.6	20.00		mg/L CaCO3	1	8/27/2015 5:29:25 PM	R28535
Carbonate (As CaCO3)	ND	2.000		mg/L CaCO3	1	8/27/2015 5:29:25 PM	R28535
Total Alkalinity (as CaCO3)	377.6	20.00		mg/L CaCO3	1	8/27/2015 5:29:25 PM	R28535
SM2540C MOD: TOTAL DISSOLVED SOLIDS							Analyst: KS
Total Dissolved Solids	4580	200	*D	mg/L	1	8/31/2015 5:27:00 PM	21029

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Analytical ReportLab Order: **1508C52**Date Reported: **9/15/2015****Hall Environmental Analysis Laboratory, Inc.****CLIENT:** Western Refining Southwest, Inc.**Client Sample ID:** MW-44**Project:** Refinery Wells 8-25-15**Collection Date:** 8/25/2015 8:20:00 AM**Lab ID:** 1508C52-003F**Matrix:** Aqueous

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 6010B: DISSOLVED METALS				Analyst: MED			
Arsenic	ND	0.020		mg/L	1	8/28/2015 2:07:19 PM	A28540
Barium	ND	0.020		mg/L	1	8/28/2015 2:07:19 PM	A28540
Cadmium	ND	0.0020		mg/L	1	8/28/2015 2:07:19 PM	A28540
Calcium	470	10		mg/L	10	9/2/2015 9:41:22 AM	A28616
Chromium	ND	0.0060		mg/L	1	8/28/2015 2:07:19 PM	A28540
Copper	ND	0.0060		mg/L	1	8/28/2015 2:07:19 PM	A28540
Iron	0.036	0.020		mg/L	1	8/28/2015 2:07:19 PM	A28540
Lead	ND	0.0050		mg/L	1	8/28/2015 2:07:19 PM	A28540
Magnesium	59	1.0		mg/L	1	8/28/2015 2:07:19 PM	A28540
Manganese	0.99	0.0020		mg/L	1	8/28/2015 2:07:19 PM	A28540
Potassium	7.9	1.0		mg/L	1	8/28/2015 2:07:19 PM	A28540
Selenium	ND	0.050		mg/L	1	8/28/2015 2:07:19 PM	A28540
Silver	ND	0.0050		mg/L	1	8/28/2015 2:07:19 PM	A28540
Sodium	960	10		mg/L	10	9/2/2015 9:41:22 AM	A28616
Uranium	ND	0.10		mg/L	1	8/28/2015 2:07:19 PM	A28540
Zinc	ND	0.020		mg/L	1	8/28/2015 2:07:19 PM	A28540

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
				Page 21 of 67

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order: 1508C52

Date Reported: 9/15/2015

CLIENT: Western Refining Southwest, Inc.
Project: Refinery Wells 8-25-15
Lab ID: 1508C52-004A

Client Sample ID: MW-44 D
Collection Date: 8/25/2015 8:20:00 AM
Matrix: Aqueous

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: DJF
Benzene	ND	2.0	D	µg/L	2	8/27/2015 4:07:34 AM	R28474
Toluene	ND	2.0	D	µg/L	2	8/27/2015 4:07:34 AM	R28474
Ethylbenzene	ND	2.0	D	µg/L	2	8/27/2015 4:07:34 AM	R28474
Methyl tert-butyl ether (MTBE)	ND	2.0	D	µg/L	2	8/27/2015 4:07:34 AM	R28474
1,2,4-Trimethylbenzene	ND	2.0	D	µg/L	2	8/27/2015 4:07:34 AM	R28474
1,3,5-Trimethylbenzene	ND	2.0	D	µg/L	2	8/27/2015 4:07:34 AM	R28474
1,2-Dichloroethane (EDC)	ND	2.0	D	µg/L	2	8/27/2015 4:07:34 AM	R28474
1,2-Dibromoethane (EDB)	ND	2.0	D	µg/L	2	8/27/2015 4:07:34 AM	R28474
Naphthalene	ND	4.0	D	µg/L	2	8/27/2015 4:07:34 AM	R28474
1-Methylnaphthalene	ND	8.0	D	µg/L	2	8/27/2015 4:07:34 AM	R28474
2-Methylnaphthalene	ND	8.0	D	µg/L	2	8/27/2015 4:07:34 AM	R28474
Acetone	ND	20	D	µg/L	2	8/27/2015 4:07:34 AM	R28474
Bromobenzene	ND	2.0	D	µg/L	2	8/27/2015 4:07:34 AM	R28474
Bromodichloromethane	ND	2.0	D	µg/L	2	8/27/2015 4:07:34 AM	R28474
Bromoform	ND	2.0	D	µg/L	2	8/27/2015 4:07:34 AM	R28474
Bromomethane	ND	6.0	D	µg/L	2	8/27/2015 4:07:34 AM	R28474
2-Butanone	ND	20	D	µg/L	2	8/27/2015 4:07:34 AM	R28474
Carbon disulfide	ND	20	D	µg/L	2	8/27/2015 4:07:34 AM	R28474
Carbon Tetrachloride	ND	2.0	D	µg/L	2	8/27/2015 4:07:34 AM	R28474
Chlorobenzene	ND	2.0	D	µg/L	2	8/27/2015 4:07:34 AM	R28474
Chloroethane	ND	4.0	D	µg/L	2	8/27/2015 4:07:34 AM	R28474
Chloroform	ND	2.0	D	µg/L	2	8/27/2015 4:07:34 AM	R28474
Chloromethane	ND	6.0	D	µg/L	2	8/27/2015 4:07:34 AM	R28474
2-Chlorotoluene	ND	2.0	D	µg/L	2	8/27/2015 4:07:34 AM	R28474
4-Chlorotoluene	ND	2.0	D	µg/L	2	8/27/2015 4:07:34 AM	R28474
cis-1,2-DCE	ND	2.0	D	µg/L	2	8/27/2015 4:07:34 AM	R28474
cis-1,3-Dichloropropene	ND	2.0	D	µg/L	2	8/27/2015 4:07:34 AM	R28474
1,2-Dibromo-3-chloropropane	ND	4.0	D	µg/L	2	8/27/2015 4:07:34 AM	R28474
Dibromochloromethane	ND	2.0	D	µg/L	2	8/27/2015 4:07:34 AM	R28474
Dibromomethane	ND	2.0	D	µg/L	2	8/27/2015 4:07:34 AM	R28474
1,2-Dichlorobenzene	ND	2.0	D	µg/L	2	8/27/2015 4:07:34 AM	R28474
1,3-Dichlorobenzene	ND	2.0	D	µg/L	2	8/27/2015 4:07:34 AM	R28474
1,4-Dichlorobenzene	ND	2.0	D	µg/L	2	8/27/2015 4:07:34 AM	R28474
Dichlorodifluoromethane	ND	2.0	D	µg/L	2	8/27/2015 4:07:34 AM	R28474
1,1-Dichloroethane	ND	2.0	D	µg/L	2	8/27/2015 4:07:34 AM	R28474
1,1-Dichloroethene	ND	2.0	D	µg/L	2	8/27/2015 4:07:34 AM	R28474
1,2-Dichloropropane	ND	2.0	D	µg/L	2	8/27/2015 4:07:34 AM	R28474
1,3-Dichloropropane	ND	2.0	D	µg/L	2	8/27/2015 4:07:34 AM	R28474
2,2-Dichloropropane	ND	4.0	D	µg/L	2	8/27/2015 4:07:34 AM	R28474
1,1-Dichloropropene	ND	2.0	D	µg/L	2	8/27/2015 4:07:34 AM	R28474
Hexachlorobutadiene	ND	2.0	D	µg/L	2	8/27/2015 4:07:34 AM	R28474

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order: 1508C52

Date Reported: 9/15/2015

CLIENT: Western Refining Southwest, Inc.
Project: Refinery Wells 8-25-15
Lab ID: 1508C52-004A

Client Sample ID: MW-44 D
Collection Date: 8/25/2015 8:20:00 AM
Matrix: Aqueous

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: DJF
2-Hexanone	ND	20	D	µg/L	2	8/27/2015 4:07:34 AM	R28474
Isopropylbenzene	ND	2.0	D	µg/L	2	8/27/2015 4:07:34 AM	R28474
4-Isopropyltoluene	ND	2.0	D	µg/L	2	8/27/2015 4:07:34 AM	R28474
4-Methyl-2-pentanone	ND	20	D	µg/L	2	8/27/2015 4:07:34 AM	R28474
Methylene Chloride	ND	6.0	D	µg/L	2	8/27/2015 4:07:34 AM	R28474
n-Butylbenzene	ND	6.0	D	µg/L	2	8/27/2015 4:07:34 AM	R28474
n-Propylbenzene	ND	2.0	D	µg/L	2	8/27/2015 4:07:34 AM	R28474
sec-Butylbenzene	ND	2.0	D	µg/L	2	8/27/2015 4:07:34 AM	R28474
Styrene	ND	2.0	D	µg/L	2	8/27/2015 4:07:34 AM	R28474
tert-Butylbenzene	ND	2.0	D	µg/L	2	8/27/2015 4:07:34 AM	R28474
1,1,1,2-Tetrachloroethane	ND	2.0	D	µg/L	2	8/27/2015 4:07:34 AM	R28474
1,1,2,2-Tetrachloroethane	ND	4.0	D	µg/L	2	8/27/2015 4:07:34 AM	R28474
Tetrachloroethene (PCE)	ND	2.0	D	µg/L	2	8/27/2015 4:07:34 AM	R28474
trans-1,2-DCE	ND	2.0	D	µg/L	2	8/27/2015 4:07:34 AM	R28474
trans-1,3-Dichloropropene	ND	2.0	D	µg/L	2	8/27/2015 4:07:34 AM	R28474
1,2,3-Trichlorobenzene	ND	2.0	D	µg/L	2	8/27/2015 4:07:34 AM	R28474
1,2,4-Trichlorobenzene	ND	2.0	D	µg/L	2	8/27/2015 4:07:34 AM	R28474
1,1,1-Trichloroethane	ND	2.0	D	µg/L	2	8/27/2015 4:07:34 AM	R28474
1,1,2-Trichloroethane	ND	2.0	D	µg/L	2	8/27/2015 4:07:34 AM	R28474
Trichloroethene (TCE)	ND	2.0	D	µg/L	2	8/27/2015 4:07:34 AM	R28474
Trichlorofluoromethane	ND	2.0	D	µg/L	2	8/27/2015 4:07:34 AM	R28474
1,2,3-Trichloropropane	ND	4.0	D	µg/L	2	8/27/2015 4:07:34 AM	R28474
Vinyl chloride	ND	2.0	D	µg/L	2	8/27/2015 4:07:34 AM	R28474
Xylenes, Total	ND	3.0	D	µg/L	2	8/27/2015 4:07:34 AM	R28474
Surr: 1,2-Dichloroethane-d4	93.6	70-130	D	%REC	2	8/27/2015 4:07:34 AM	R28474
Surr: 4-Bromofluorobenzene	105	70-130	D	%REC	2	8/27/2015 4:07:34 AM	R28474
Surr: Dibromofluoromethane	106	70-130	D	%REC	2	8/27/2015 4:07:34 AM	R28474
Surr: Toluene-d8	90.3	70-130	D	%REC	2	8/27/2015 4:07:34 AM	R28474

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
				Page 23 of 67

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order: 1508C52

Date Reported: 9/15/2015

CLIENT: Western Refining Southwest, Inc.
Project: Refinery Wells 8-25-15
Lab ID: 1508C52-004B

Client Sample ID: MW-44 D
Collection Date: 8/25/2015 8:20:00 AM
Matrix: Aqueous

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	ND	0.050		mg/L	1	8/26/2015 9:20:25 PM	R28483
Surr: BFB	83.4	57.8-137		%REC	1	8/26/2015 9:20:25 PM	R28483

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Analytical ReportLab Order: **1508C52**Date Reported: **9/15/2015****Hall Environmental Analysis Laboratory, Inc.****CLIENT:** Western Refining Southwest, Inc.**Client Sample ID:** MW-44 D**Project:** Refinery Wells 8-25-15**Collection Date:** 8/25/2015 8:20:00 AM**Lab ID:** 1508C52-004C**Matrix:** Aqueous

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D: DIESEL RANGE							Analyst: TOM
Diesel Range Organics (DRO)	ND	0.20		mg/L	1	8/26/2015 6:50:15 PM	20987
Motor Oil Range Organics (MRO)	ND	2.5		mg/L	1	8/26/2015 6:50:15 PM	20987
Surr: DNOP	107	84.6-165		%REC	1	8/26/2015 6:50:15 PM	20987

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order: 1508C52

Date Reported: 9/15/2015

CLIENT: Western Refining Southwest, Inc.
Project: Refinery Wells 8-25-15
Lab ID: 1508C52-004D

Client Sample ID: MW-44 D
Collection Date: 8/25/2015 8:20:00 AM
Matrix: Aqueous

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 7470: MERCURY							Analyst: MED
Mercury	ND	0.00020		mg/L	1	9/2/2015 12:45:08 PM	21096
EPA 6010B: TOTAL RECOVERABLE METALS							Analyst: MED
Arsenic	ND	0.020		mg/L	1	9/2/2015 9:47:40 AM	21082
Barium	0.33	0.020		mg/L	1	9/2/2015 9:47:40 AM	21082
Cadmium	ND	0.0020		mg/L	1	9/2/2015 9:47:40 AM	21082
Chromium	0.047	0.0060		mg/L	1	9/2/2015 9:47:40 AM	21082
Lead	0.0076	0.0050		mg/L	1	9/2/2015 9:47:40 AM	21082
Selenium	ND	0.050		mg/L	1	9/2/2015 9:47:40 AM	21082
Silver	ND	0.0050		mg/L	1	9/2/2015 9:47:40 AM	21082

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order: 1508C52

Date Reported: 9/15/2015

CLIENT: Western Refining Southwest, Inc.
Project: Refinery Wells 8-25-15
Lab ID: 1508C52-004E

Client Sample ID: MW-44 D
Collection Date: 8/25/2015 8:20:00 AM
Matrix: Aqueous

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
CARBON DIOXIDE							Analyst: JRR
Total Carbon Dioxide	340	1.0	H	mg CO2/L	1	8/27/2015 5:46:34 PM	R28535
EPA METHOD 300.0: ANIONS							Analyst: LGT
Fluoride	ND	0.10		mg/L	1	8/26/2015 2:30:03 PM	R28493
Chloride	55	10		mg/L	20	8/26/2015 2:42:28 PM	R28493
Nitrogen, Nitrite (As N)	ND	0.10		mg/L	1	8/26/2015 2:30:03 PM	R28493
Bromide	0.33	0.10		mg/L	1	8/26/2015 2:30:03 PM	R28493
Nitrogen, Nitrate (As N)	ND	0.10		mg/L	1	8/26/2015 2:30:03 PM	R28493
Phosphorus, Orthophosphate (As P)	ND	10		mg/L	20	8/26/2015 2:42:28 PM	R28493
Sulfate	3100	50	*	mg/L	100	9/1/2015 8:32:01 PM	R28611
SM2510B: SPECIFIC CONDUCTANCE							Analyst: JRR
Conductivity	5500	0.010		µmhos/cm	1	8/27/2015 5:46:34 PM	R28535
SM2320B: ALKALINITY							Analyst: JRR
Bicarbonate (As CaCO3)	379.7	20.00		mg/L CaCO3	1	8/27/2015 5:46:34 PM	R28535
Carbonate (As CaCO3)	ND	2.000		mg/L CaCO3	1	8/27/2015 5:46:34 PM	R28535
Total Alkalinity (as CaCO3)	379.7	20.00		mg/L CaCO3	1	8/27/2015 5:46:34 PM	R28535
SM2540C MOD: TOTAL DISSOLVED SOLIDS							Analyst: KS
Total Dissolved Solids	4560	200	*D	mg/L	1	8/31/2015 5:27:00 PM	21029

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order: 1508C52

Date Reported: 9/15/2015

CLIENT: Western Refining Southwest, Inc.
Project: Refinery Wells 8-25-15
Lab ID: 1508C52-004F

Client Sample ID: MW-44 D
Collection Date: 8/25/2015 8:20:00 AM
Matrix: Aqueous

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 6010B: DISSOLVED METALS							Analyst: MED
Arsenic	ND	0.020		mg/L	1	8/28/2015 2:14:49 PM	A28540
Barium	ND	0.020		mg/L	1	8/28/2015 2:14:49 PM	A28540
Cadmium	ND	0.0020		mg/L	1	8/28/2015 2:14:49 PM	A28540
Calcium	490	10		mg/L	10	8/28/2015 3:21:32 PM	A28540
Chromium	ND	0.0060		mg/L	1	8/28/2015 2:14:49 PM	A28540
Copper	ND	0.0060		mg/L	1	8/28/2015 2:14:49 PM	A28540
Iron	0.048	0.020		mg/L	1	8/28/2015 2:14:49 PM	A28540
Lead	ND	0.0050		mg/L	1	8/28/2015 2:14:49 PM	A28540
Magnesium	59	1.0		mg/L	1	8/28/2015 2:14:49 PM	A28540
Manganese	1.0	0.0040		mg/L	2	8/28/2015 3:19:36 PM	A28540
Potassium	7.9	1.0		mg/L	1	8/28/2015 2:14:49 PM	A28540
Selenium	ND	0.050		mg/L	1	8/28/2015 2:14:49 PM	A28540
Silver	ND	0.0050		mg/L	1	8/28/2015 2:14:49 PM	A28540
Sodium	950	10		mg/L	10	8/28/2015 3:21:32 PM	A28540
Uranium	ND	0.10		mg/L	1	8/28/2015 2:14:49 PM	A28540
Zinc	0.021	0.020		mg/L	1	8/28/2015 2:14:49 PM	A28540

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Analytical Report

Lab Order: 1508C52

Hall Environmental Analysis Laboratory, Inc.

Date Reported: 9/15/2015

CLIENT: Western Refining Southwest, Inc.
Project: Refinery Wells 8-25-15
Lab ID: 1508C52-005A

Client Sample ID: MW-4
Collection Date: 8/25/2015 8:55:00 AM
Matrix: Aqueous

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: DJF
Benzene	210	10		µg/L	10	8/27/2015 12:46:50 PM	R28514
Toluene	ND	1.0		µg/L	1	8/27/2015 4:34:59 AM	R28474
Ethylbenzene	17	1.0		µg/L	1	8/27/2015 4:34:59 AM	R28474
Methyl tert-butyl ether (MTBE)	ND	1.0		µg/L	1	8/27/2015 4:34:59 AM	R28474
1,2,4-Trimethylbenzene	4.1	1.0		µg/L	1	8/27/2015 4:34:59 AM	R28474
1,3,5-Trimethylbenzene	ND	1.0		µg/L	1	8/27/2015 4:34:59 AM	R28474
1,2-Dichloroethane (EDC)	ND	1.0		µg/L	1	8/27/2015 4:34:59 AM	R28474
1,2-Dibromoethane (EDB)	ND	1.0		µg/L	1	8/27/2015 4:34:59 AM	R28474
Naphthalene	78	2.0		µg/L	1	8/27/2015 4:34:59 AM	R28474
1-Methylnaphthalene	21	4.0		µg/L	1	8/27/2015 4:34:59 AM	R28474
2-Methylnaphthalene	37	4.0		µg/L	1	8/27/2015 4:34:59 AM	R28474
Acetone	ND	10		µg/L	1	8/27/2015 4:34:59 AM	R28474
Bromobenzene	ND	1.0		µg/L	1	8/27/2015 4:34:59 AM	R28474
Bromodichloromethane	ND	1.0		µg/L	1	8/27/2015 4:34:59 AM	R28474
Bromoform	ND	1.0		µg/L	1	8/27/2015 4:34:59 AM	R28474
Bromomethane	ND	3.0		µg/L	1	8/27/2015 4:34:59 AM	R28474
2-Butanone	ND	10		µg/L	1	8/27/2015 4:34:59 AM	R28474
Carbon disulfide	ND	10		µg/L	1	8/27/2015 4:34:59 AM	R28474
Carbon Tetrachloride	ND	1.0		µg/L	1	8/27/2015 4:34:59 AM	R28474
Chlorobenzene	ND	1.0		µg/L	1	8/27/2015 4:34:59 AM	R28474
Chloroethane	ND	2.0		µg/L	1	8/27/2015 4:34:59 AM	R28474
Chloroform	ND	1.0		µg/L	1	8/27/2015 4:34:59 AM	R28474
Chloromethane	ND	3.0		µg/L	1	8/27/2015 4:34:59 AM	R28474
2-Chlorotoluene	ND	1.0		µg/L	1	8/27/2015 4:34:59 AM	R28474
4-Chlorotoluene	ND	1.0		µg/L	1	8/27/2015 4:34:59 AM	R28474
cis-1,2-DCE	ND	1.0		µg/L	1	8/27/2015 4:34:59 AM	R28474
cis-1,3-Dichloropropene	ND	1.0		µg/L	1	8/27/2015 4:34:59 AM	R28474
1,2-Dibromo-3-chloropropane	ND	2.0		µg/L	1	8/27/2015 4:34:59 AM	R28474
Dibromochloromethane	ND	1.0		µg/L	1	8/27/2015 4:34:59 AM	R28474
Dibromomethane	ND	1.0		µg/L	1	8/27/2015 4:34:59 AM	R28474
1,2-Dichlorobenzene	ND	1.0		µg/L	1	8/27/2015 4:34:59 AM	R28474
1,3-Dichlorobenzene	ND	1.0		µg/L	1	8/27/2015 4:34:59 AM	R28474
1,4-Dichlorobenzene	ND	1.0		µg/L	1	8/27/2015 4:34:59 AM	R28474
Dichlorodifluoromethane	ND	1.0		µg/L	1	8/27/2015 4:34:59 AM	R28474
1,1-Dichloroethane	ND	1.0		µg/L	1	8/27/2015 4:34:59 AM	R28474
1,1-Dichloroethene	ND	1.0		µg/L	1	8/27/2015 4:34:59 AM	R28474
1,2-Dichloropropane	ND	1.0		µg/L	1	8/27/2015 4:34:59 AM	R28474
1,3-Dichloropropane	ND	1.0		µg/L	1	8/27/2015 4:34:59 AM	R28474
2,2-Dichloropropane	ND	2.0		µg/L	1	8/27/2015 4:34:59 AM	R28474
1,1-Dichloropropene	ND	1.0		µg/L	1	8/27/2015 4:34:59 AM	R28474
Hexachlorobutadiene	ND	1.0		µg/L	1	8/27/2015 4:34:59 AM	R28474

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order: 1508C52

Date Reported: 9/15/2015

CLIENT: Western Refining Southwest, Inc.
Project: Refinery Wells 8-25-15
Lab ID: 1508C52-005A

Client Sample ID: MW-4
Collection Date: 8/25/2015 8:55:00 AM
Matrix: Aqueous

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: DJF
2-Hexanone	ND	10		µg/L	1	8/27/2015 4:34:59 AM	R28474
Isopropylbenzene	49	1.0		µg/L	1	8/27/2015 4:34:59 AM	R28474
4-Isopropyltoluene	ND	1.0		µg/L	1	8/27/2015 4:34:59 AM	R28474
4-Methyl-2-pentanone	ND	10		µg/L	1	8/27/2015 4:34:59 AM	R28474
Methylene Chloride	ND	3.0		µg/L	1	8/27/2015 4:34:59 AM	R28474
n-Butylbenzene	ND	3.0		µg/L	1	8/27/2015 4:34:59 AM	R28474
n-Propylbenzene	39	1.0		µg/L	1	8/27/2015 4:34:59 AM	R28474
sec-Butylbenzene	7.7	1.0		µg/L	1	8/27/2015 4:34:59 AM	R28474
Styrene	ND	1.0		µg/L	1	8/27/2015 4:34:59 AM	R28474
tert-Butylbenzene	1.2	1.0		µg/L	1	8/27/2015 4:34:59 AM	R28474
1,1,1,2-Tetrachloroethane	ND	1.0		µg/L	1	8/27/2015 4:34:59 AM	R28474
1,1,2,2-Tetrachloroethane	ND	2.0		µg/L	1	8/27/2015 4:34:59 AM	R28474
Tetrachloroethene (PCE)	ND	1.0		µg/L	1	8/27/2015 4:34:59 AM	R28474
trans-1,2-DCE	ND	1.0		µg/L	1	8/27/2015 4:34:59 AM	R28474
trans-1,3-Dichloropropene	ND	1.0		µg/L	1	8/27/2015 4:34:59 AM	R28474
1,2,3-Trichlorobenzene	ND	1.0		µg/L	1	8/27/2015 4:34:59 AM	R28474
1,2,4-Trichlorobenzene	ND	1.0		µg/L	1	8/27/2015 4:34:59 AM	R28474
1,1,1-Trichloroethane	ND	1.0		µg/L	1	8/27/2015 4:34:59 AM	R28474
1,1,2-Trichloroethane	ND	1.0		µg/L	1	8/27/2015 4:34:59 AM	R28474
Trichloroethene (TCE)	ND	1.0		µg/L	1	8/27/2015 4:34:59 AM	R28474
Trichlorofluoromethane	ND	1.0		µg/L	1	8/27/2015 4:34:59 AM	R28474
1,2,3-Trichloropropane	ND	2.0		µg/L	1	8/27/2015 4:34:59 AM	R28474
Vinyl chloride	ND	1.0		µg/L	1	8/27/2015 4:34:59 AM	R28474
Xylenes, Total	11	1.5		µg/L	1	8/27/2015 4:34:59 AM	R28474
Surr: 1,2-Dichloroethane-d4	142	70-130	S	%REC	1	8/27/2015 4:34:59 AM	R28474
Surr: 4-Bromofluorobenzene	89.1	70-130		%REC	1	8/27/2015 4:34:59 AM	R28474
Surr: Dibromofluoromethane	104	70-130		%REC	1	8/27/2015 4:34:59 AM	R28474
Surr: Toluene-d8	96.7	70-130		%REC	1	8/27/2015 4:34:59 AM	R28474

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
				Page 30 of 67

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order: 1508C52

Date Reported: 9/15/2015

CLIENT: Western Refining Southwest, Inc.
Project: Refinery Wells 8-25-15
Lab ID: 1508C52-005B

Client Sample ID: MW-4
Collection Date: 8/25/2015 8:55:00 AM
Matrix: Aqueous

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	14	0.50		mg/L	10	8/26/2015 9:45:09 PM	R28483
Surr: BFB	176	57.8-137	S	%REC	10	8/26/2015 9:45:09 PM	R28483

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order: 1508C52

Date Reported: 9/15/2015

CLIENT: Western Refining Southwest, Inc.
Project: Refinery Wells 8-25-15
Lab ID: 1508C52-005C

Client Sample ID: MW-4
Collection Date: 8/25/2015 8:55:00 AM
Matrix: Aqueous

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D: DIESEL RANGE							Analyst: TOM
Diesel Range Organics (DRO)	2.1	0.20		mg/L	1	8/26/2015 7:11:34 PM	20987
Motor Oil Range Organics (MRO)	ND	2.5		mg/L	1	8/26/2015 7:11:34 PM	20987
Surr: DNOP	100	84.6-165		%REC	1	8/26/2015 7:11:34 PM	20987

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order: 1508C52

Date Reported: 9/15/2015

CLIENT: Western Refining Southwest, Inc.
Project: Refinery Wells 8-25-15
Lab ID: 1508C52-005D

Client Sample ID: MW-4
Collection Date: 8/25/2015 8:55:00 AM
Matrix: Aqueous

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 7470: MERCURY							Analyst: MED
Mercury	ND	0.00020		mg/L	1	9/2/2015 12:47:13 PM	21096
EPA 6010B: TOTAL RECOVERABLE METALS							Analyst: MED
Arsenic	ND	0.020		mg/L	1	9/2/2015 9:49:07 AM	21082
Barium	2.0	0.10		mg/L	5	9/2/2015 10:18:35 AM	21082
Cadmium	ND	0.0020		mg/L	1	9/2/2015 9:49:07 AM	21082
Chromium	ND	0.0060		mg/L	1	9/2/2015 9:49:07 AM	21082
Lead	0.0050	0.0050		mg/L	1	9/2/2015 9:49:07 AM	21082
Selenium	ND	0.050		mg/L	1	9/2/2015 9:49:07 AM	21082
Silver	ND	0.0050		mg/L	1	9/2/2015 9:49:07 AM	21082

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order: 1508C52

Date Reported: 9/15/2015

CLIENT: Western Refining Southwest, Inc.
Project: Refinery Wells 8-25-15
Lab ID: 1508C52-005E

Client Sample ID: MW-4
Collection Date: 8/25/2015 8:55:00 AM
Matrix: Aqueous

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
CARBON DIOXIDE							Analyst: JRR
Total Carbon Dioxide	1100	1.0	H	mg CO2/L	1	8/27/2015 6:03:16 PM	R28535
EPA METHOD 300.0: ANIONS							Analyst: LGT
Fluoride	0.29	0.10		mg/L	1	8/26/2015 2:54:52 PM	R28493
Chloride	250	10		mg/L	20	8/26/2015 3:07:16 PM	R28493
Nitrogen, Nitrite (As N)	ND	0.10		mg/L	1	8/26/2015 2:54:52 PM	R28493
Bromide	ND	0.10		mg/L	1	8/26/2015 2:54:52 PM	R28493
Nitrogen, Nitrate (As N)	0.74	0.10		mg/L	1	8/26/2015 2:54:52 PM	R28493
Phosphorus, Orthophosphate (As P)	ND	0.50		mg/L	1	8/26/2015 2:54:52 PM	R28493
Sulfate	1.0	0.50		mg/L	1	8/26/2015 2:54:52 PM	R28493
SM2510B: SPECIFIC CONDUCTANCE							Analyst: JRR
Conductivity	2600	0.010		µmhos/cm	1	8/27/2015 6:03:16 PM	R28535
SM2320B: ALKALINITY							Analyst: JRR
Bicarbonate (As CaCO3)	1148	20.00		mg/L CaCO3	1	8/27/2015 6:03:16 PM	R28535
Carbonate (As CaCO3)	ND	2.000		mg/L CaCO3	1	8/27/2015 6:03:16 PM	R28535
Total Alkalinity (as CaCO3)	1148	20.00		mg/L CaCO3	1	8/27/2015 6:03:16 PM	R28535
SM2540C MOD: TOTAL DISSOLVED SOLIDS							Analyst: KS
Total Dissolved Solids	1600	100	*D	mg/L	1	8/31/2015 5:27:00 PM	21029

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Analytical ReportLab Order: **1508C52**Date Reported: **9/15/2015****Hall Environmental Analysis Laboratory, Inc.****CLIENT:** Western Refining Southwest, Inc.**Client Sample ID:** MW-4**Project:** Refinery Wells 8-25-15**Collection Date:** 8/25/2015 8:55:00 AM**Lab ID:** 1508C52-005F**Matrix:** Aqueous

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 6010B: DISSOLVED METALS							Analyst: MED
Arsenic	ND	0.020		mg/L	1	8/28/2015 2:16:40 PM	A28540
Barium	2.3	0.10		mg/L	5	8/28/2015 3:29:06 PM	A28540
Cadmium	ND	0.0020		mg/L	1	8/28/2015 2:16:40 PM	A28540
Calcium	170	5.0		mg/L	5	8/28/2015 3:29:06 PM	A28540
Chromium	ND	0.0060		mg/L	1	8/28/2015 2:16:40 PM	A28540
Copper	ND	0.0060		mg/L	1	8/28/2015 2:16:40 PM	A28540
Iron	6.2	0.20		mg/L	10	8/28/2015 3:31:05 PM	A28540
Lead	0.0065	0.0050		mg/L	1	8/28/2015 2:16:40 PM	A28540
Magnesium	66	1.0		mg/L	1	8/28/2015 2:16:40 PM	A28540
Manganese	3.5	0.010		mg/L	5	8/28/2015 3:29:06 PM	A28540
Potassium	4.3	1.0		mg/L	1	8/28/2015 2:16:40 PM	A28540
Selenium	ND	0.050		mg/L	1	8/28/2015 2:16:40 PM	A28540
Silver	ND	0.0050		mg/L	1	8/28/2015 2:16:40 PM	A28540
Sodium	360	5.0		mg/L	5	8/28/2015 3:29:06 PM	A28540
Uranium	ND	0.10		mg/L	1	8/28/2015 2:16:40 PM	A28540
Zinc	0.024	0.020		mg/L	1	8/28/2015 2:16:40 PM	A28540

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
				Page 35 of 67

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order: 1508C52

Date Reported: 9/15/2015

CLIENT: Western Refining Southwest, Inc.
Project: Refinery Wells 8-25-15
Lab ID: 1508C52-006A

Client Sample ID: RW-15
Collection Date: 8/25/2015 9:20:00 AM
Matrix: Aqueous

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES				Analyst: DJF			
Benzene	1200	20		µg/L	20	8/27/2015 5:02:26 AM	R28474
Toluene	740	20		µg/L	20	8/27/2015 5:02:26 AM	R28474
Ethylbenzene	610	20		µg/L	20	8/27/2015 5:02:26 AM	R28474
Methyl tert-butyl ether (MTBE)	110	20		µg/L	20	8/27/2015 5:02:26 AM	R28474
1,2,4-Trimethylbenzene	650	20		µg/L	20	8/27/2015 5:02:26 AM	R28474
1,3,5-Trimethylbenzene	92	20		µg/L	20	8/27/2015 5:02:26 AM	R28474
1,2-Dichloroethane (EDC)	ND	20		µg/L	20	8/27/2015 5:02:26 AM	R28474
1,2-Dibromoethane (EDB)	ND	20		µg/L	20	8/27/2015 5:02:26 AM	R28474
Naphthalene	170	40		µg/L	20	8/27/2015 5:02:26 AM	R28474
1-Methylnaphthalene	ND	80		µg/L	20	8/27/2015 5:02:26 AM	R28474
2-Methylnaphthalene	95	80		µg/L	20	8/27/2015 5:02:26 AM	R28474
Acetone	ND	200		µg/L	20	8/27/2015 5:02:26 AM	R28474
Bromobenzene	ND	20		µg/L	20	8/27/2015 5:02:26 AM	R28474
Bromodichloromethane	ND	20		µg/L	20	8/27/2015 5:02:26 AM	R28474
Bromoform	ND	20		µg/L	20	8/27/2015 5:02:26 AM	R28474
Bromomethane	ND	60		µg/L	20	8/27/2015 5:02:26 AM	R28474
2-Butanone	ND	200		µg/L	20	8/27/2015 5:02:26 AM	R28474
Carbon disulfide	ND	200		µg/L	20	8/27/2015 5:02:26 AM	R28474
Carbon Tetrachloride	ND	20		µg/L	20	8/27/2015 5:02:26 AM	R28474
Chlorobenzene	ND	20		µg/L	20	8/27/2015 5:02:26 AM	R28474
Chloroethane	ND	40		µg/L	20	8/27/2015 5:02:26 AM	R28474
Chloroform	ND	20		µg/L	20	8/27/2015 5:02:26 AM	R28474
Chloromethane	ND	60		µg/L	20	8/27/2015 5:02:26 AM	R28474
2-Chlorotoluene	ND	20		µg/L	20	8/27/2015 5:02:26 AM	R28474
4-Chlorotoluene	ND	20		µg/L	20	8/27/2015 5:02:26 AM	R28474
cis-1,2-DCE	ND	20		µg/L	20	8/27/2015 5:02:26 AM	R28474
cis-1,3-Dichloropropene	ND	20		µg/L	20	8/27/2015 5:02:26 AM	R28474
1,2-Dibromo-3-chloropropane	ND	40		µg/L	20	8/27/2015 5:02:26 AM	R28474
Dibromochloromethane	ND	20		µg/L	20	8/27/2015 5:02:26 AM	R28474
Dibromomethane	ND	20		µg/L	20	8/27/2015 5:02:26 AM	R28474
1,2-Dichlorobenzene	ND	20		µg/L	20	8/27/2015 5:02:26 AM	R28474
1,3-Dichlorobenzene	ND	20		µg/L	20	8/27/2015 5:02:26 AM	R28474
1,4-Dichlorobenzene	ND	20		µg/L	20	8/27/2015 5:02:26 AM	R28474
Dichlorodifluoromethane	ND	20		µg/L	20	8/27/2015 5:02:26 AM	R28474
1,1-Dichloroethane	ND	20		µg/L	20	8/27/2015 5:02:26 AM	R28474
1,1-Dichloroethene	ND	20		µg/L	20	8/27/2015 5:02:26 AM	R28474
1,2-Dichloropropane	ND	20		µg/L	20	8/27/2015 5:02:26 AM	R28474
1,3-Dichloropropane	ND	20		µg/L	20	8/27/2015 5:02:26 AM	R28474
2,2-Dichloropropane	ND	40		µg/L	20	8/27/2015 5:02:26 AM	R28474
1,1-Dichloropropene	ND	20		µg/L	20	8/27/2015 5:02:26 AM	R28474
Hexachlorobutadiene	ND	20		µg/L	20	8/27/2015 5:02:26 AM	R28474

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Analytical Report

Lab Order: 1508C52

Hall Environmental Analysis Laboratory, Inc.

Date Reported: 9/15/2015

CLIENT: Western Refining Southwest, Inc.
Project: Refinery Wells 8-25-15
Lab ID: 1508C52-006A

Client Sample ID: RW-15
Collection Date: 8/25/2015 9:20:00 AM
Matrix: Aqueous

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES				Analyst: DJF			
2-Hexanone	ND	200		µg/L	20	8/27/2015 5:02:26 AM	R28474
Isopropylbenzene	23	20		µg/L	20	8/27/2015 5:02:26 AM	R28474
4-Isopropyltoluene	ND	20		µg/L	20	8/27/2015 5:02:26 AM	R28474
4-Methyl-2-pentanone	ND	200		µg/L	20	8/27/2015 5:02:26 AM	R28474
Methylene Chloride	ND	60		µg/L	20	8/27/2015 5:02:26 AM	R28474
n-Butylbenzene	ND	60		µg/L	20	8/27/2015 5:02:26 AM	R28474
n-Propylbenzene	59	20		µg/L	20	8/27/2015 5:02:26 AM	R28474
sec-Butylbenzene	ND	20		µg/L	20	8/27/2015 5:02:26 AM	R28474
Styrene	ND	20		µg/L	20	8/27/2015 5:02:26 AM	R28474
tert-Butylbenzene	ND	20		µg/L	20	8/27/2015 5:02:26 AM	R28474
1,1,1,2-Tetrachloroethane	ND	20		µg/L	20	8/27/2015 5:02:26 AM	R28474
1,1,2,2-Tetrachloroethane	ND	40		µg/L	20	8/27/2015 5:02:26 AM	R28474
Tetrachloroethene (PCE)	ND	20		µg/L	20	8/27/2015 5:02:26 AM	R28474
trans-1,2-DCE	ND	20		µg/L	20	8/27/2015 5:02:26 AM	R28474
trans-1,3-Dichloropropene	ND	20		µg/L	20	8/27/2015 5:02:26 AM	R28474
1,2,3-Trichlorobenzene	ND	20		µg/L	20	8/27/2015 5:02:26 AM	R28474
1,2,4-Trichlorobenzene	ND	20		µg/L	20	8/27/2015 5:02:26 AM	R28474
1,1,1-Trichloroethane	ND	20		µg/L	20	8/27/2015 5:02:26 AM	R28474
1,1,2-Trichloroethane	ND	20		µg/L	20	8/27/2015 5:02:26 AM	R28474
Trichloroethene (TCE)	ND	20		µg/L	20	8/27/2015 5:02:26 AM	R28474
Trichlorofluoromethane	ND	20		µg/L	20	8/27/2015 5:02:26 AM	R28474
1,2,3-Trichloropropane	ND	40		µg/L	20	8/27/2015 5:02:26 AM	R28474
Vinyl chloride	ND	20		µg/L	20	8/27/2015 5:02:26 AM	R28474
Xylenes, Total	1000	30		µg/L	20	8/27/2015 5:02:26 AM	R28474
Surr: 1,2-Dichloroethane-d4	97.7	70-130		%REC	20	8/27/2015 5:02:26 AM	R28474
Surr: 4-Bromofluorobenzene	97.1	70-130		%REC	20	8/27/2015 5:02:26 AM	R28474
Surr: Dibromofluoromethane	103	70-130		%REC	20	8/27/2015 5:02:26 AM	R28474
Surr: Toluene-d8	92.0	70-130		%REC	20	8/27/2015 5:02:26 AM	R28474

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
				Page 37 of 67

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order: 1508C52

Date Reported: 9/15/2015

CLIENT: Western Refining Southwest, Inc.
Project: Refinery Wells 8-25-15
Lab ID: 1508C52-006B

Client Sample ID: RW-15
Collection Date: 8/25/2015 9:20:00 AM
Matrix: Aqueous

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	16	2.5		mg/L	50	8/26/2015 10:09:55 PM	R28483
Surr: BFB	92.9	57.8-137		%REC	50	8/26/2015 10:09:55 PM	R28483

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order: 1508C52

Date Reported: 9/15/2015

CLIENT: Western Refining Southwest, Inc.
Project: Refinery Wells 8-25-15
Lab ID: 1508C52-006C

Client Sample ID: RW-15
Collection Date: 8/25/2015 9:20:00 AM
Matrix: Aqueous

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D: DIESEL RANGE							Analyst: TOM
Diesel Range Organics (DRO)	20	0.20		mg/L	1	8/26/2015 7:32:49 PM	20987
Motor Oil Range Organics (MRO)	12	2.5		mg/L	1	8/26/2015 7:32:49 PM	20987
Surr: DNOP	153	84.6-165		%REC	1	8/26/2015 7:32:49 PM	20987

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order: 1508C52

Date Reported: 9/15/2015

CLIENT: Western Refining Southwest, Inc.
Project: Refinery Wells 8-25-15
Lab ID: 1508C52-006D

Client Sample ID: RW-15
Collection Date: 8/25/2015 9:20:00 AM
Matrix: Aqueous

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 7470: MERCURY							Analyst: MED
Mercury	ND	0.00020		mg/L	1	9/2/2015 12:53:34 PM	21096
EPA 6010B: TOTAL RECOVERABLE METALS							Analyst: MED
Arsenic	ND	0.020		mg/L	1	9/2/2015 9:58:31 AM	21082
Barium	1.5	0.10		mg/L	5	9/2/2015 10:19:59 AM	21082
Cadmium	ND	0.0020		mg/L	1	9/2/2015 9:58:31 AM	21082
Chromium	ND	0.0060		mg/L	1	9/2/2015 9:58:31 AM	21082
Lead	ND	0.0050		mg/L	1	9/2/2015 9:58:31 AM	21082
Selenium	ND	0.050		mg/L	1	9/2/2015 9:58:31 AM	21082
Silver	ND	0.0050		mg/L	1	9/2/2015 9:58:31 AM	21082

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order: 1508C52

Date Reported: 9/15/2015

CLIENT: Western Refining Southwest, Inc.
Project: Refinery Wells 8-25-15
Lab ID: 1508C52-006E

Client Sample ID: RW-15
Collection Date: 8/25/2015 9:20:00 AM
Matrix: Aqueous

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
CARBON DIOXIDE							Analyst: JRR
Total Carbon Dioxide	1200	2.5	H	mg CO2/L	2.5	8/28/2015 12:35:42 PM	R28559
EPA METHOD 300.0: ANIONS							Analyst: LGT
Fluoride	ND	0.50		mg/L	5	8/26/2015 3:19:41 PM	R28493
Chloride	480	25	*	mg/L	50	9/1/2015 8:44:26 PM	R28611
Nitrogen, Nitrite (As N)	ND	0.50		mg/L	5	8/26/2015 3:19:41 PM	R28493
Bromide	6.3	0.50		mg/L	5	8/26/2015 3:19:41 PM	R28493
Nitrogen, Nitrate (As N)	ND	0.50		mg/L	5	8/26/2015 3:19:41 PM	R28493
Phosphorus, Orthophosphate (As P')	ND	2.5		mg/L	5	8/26/2015 3:19:41 PM	R28493
Sulfate	ND	2.5		mg/L	5	8/26/2015 3:19:41 PM	R28493
SM2510B: SPECIFIC CONDUCTANCE							Analyst: JRR
Conductivity	3400	0.010		µmhos/cm	1	8/27/2015 6:40:08 PM	R28535
SM2320B: ALKALINITY							Analyst: JRR
Bicarbonate (As CaCO3)	1221	50.00		mg/L CaCO3	2.5	8/28/2015 12:35:42 PM	R28559
Carbonate (As CaCO3)	ND	5.000		mg/L CaCO3	2.5	8/28/2015 12:35:42 PM	R28559
Total Alkalinity (as CaCO3)	1221	50.00		mg/L CaCO3	2.5	8/28/2015 12:35:42 PM	R28559
SM2540C MOD: TOTAL DISSOLVED SOLIDS							Analyst: KS
Total Dissolved Solids	2070	200	*D	mg/L	1	8/31/2015 5:27:00 PM	21029

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Analytical ReportLab Order: **1508C52**Date Reported: **9/15/2015****Hall Environmental Analysis Laboratory, Inc.****CLIENT:** Western Refining Southwest, Inc.**Client Sample ID:** RW-15**Project:** Refinery Wells 8-25-15**Collection Date:** 8/25/2015 9:20:00 AM**Lab ID:** 1508C52-006F**Matrix:** Aqueous

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 6010B: DISSOLVED METALS							Analyst: MED
Arsenic	ND	0.020		mg/L	1	8/28/2015 2:18:23 PM	A28540
Barium	1.6	0.10		mg/L	5	8/28/2015 3:33:17 PM	A28540
Cadmium	ND	0.0020		mg/L	1	8/28/2015 2:18:23 PM	A28540
Calcium	170	5.0		mg/L	5	8/28/2015 3:33:17 PM	A28540
Chromium	ND	0.0060		mg/L	1	8/28/2015 2:18:23 PM	A28540
Copper	ND	0.0060		mg/L	1	8/28/2015 2:18:23 PM	A28540
Iron	48	2.0		mg/L	100	8/28/2015 3:36:48 PM	A28540
Lead	ND	0.0050		mg/L	1	8/28/2015 2:18:23 PM	A28540
Magnesium	49	1.0		mg/L	1	8/28/2015 2:18:23 PM	A28540
Manganese	3.0	0.010		mg/L	5	8/28/2015 3:33:17 PM	A28540
Potassium	3.7	1.0		mg/L	1	8/28/2015 2:18:23 PM	A28540
Selenium	ND	0.050		mg/L	1	8/28/2015 2:18:23 PM	A28540
Silver	ND	0.0050		mg/L	1	8/28/2015 2:18:23 PM	A28540
Sodium	560	10		mg/L	10	8/28/2015 3:34:58 PM	A28540
Uranium	ND	0.10		mg/L	1	8/28/2015 2:18:23 PM	A28540
Zinc	0.15	0.020		mg/L	1	8/28/2015 2:18:23 PM	A28540

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
				Page 42 of 67

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order: 1508C52

Date Reported: 9/15/2015

CLIENT: Western Refining Southwest, Inc.
Project: Refinery Wells 8-25-15
Lab ID: 1508C52-007A

Client Sample ID: MW-31
Collection Date: 8/25/2015 7:30:00 AM
Matrix: Aqueous

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: DJF
Benzene	3900	100		µg/L	100	8/27/2015 1:14:22 PM	R28514
Toluene	3500	100		µg/L	100	8/27/2015 1:14:22 PM	R28514
Ethylbenzene	1600	20		µg/L	20	8/27/2015 5:29:56 AM	R28474
Methyl tert-butyl ether (MTBE)	ND	20		µg/L	20	8/27/2015 5:29:56 AM	R28474
1,2,4-Trimethylbenzene	1700	20		µg/L	20	8/27/2015 5:29:56 AM	R28474
1,3,5-Trimethylbenzene	82	20		µg/L	20	8/27/2015 5:29:56 AM	R28474
1,2-Dichloroethane (EDC)	ND	20		µg/L	20	8/27/2015 5:29:56 AM	R28474
1,2-Dibromoethane (EDB)	ND	20		µg/L	20	8/27/2015 5:29:56 AM	R28474
Naphthalene	210	40		µg/L	20	8/27/2015 5:29:56 AM	R28474
1-Methylnaphthalene	ND	80		µg/L	20	8/27/2015 5:29:56 AM	R28474
2-Methylnaphthalene	96	80		µg/L	20	8/27/2015 5:29:56 AM	R28474
Acetone	ND	200		µg/L	20	8/27/2015 5:29:56 AM	R28474
Bromobenzene	ND	20		µg/L	20	8/27/2015 5:29:56 AM	R28474
Bromodichloromethane	ND	20		µg/L	20	8/27/2015 5:29:56 AM	R28474
Bromoform	ND	20		µg/L	20	8/27/2015 5:29:56 AM	R28474
Bromomethane	ND	60		µg/L	20	8/27/2015 5:29:56 AM	R28474
2-Butanone	ND	200		µg/L	20	8/27/2015 5:29:56 AM	R28474
Carbon disulfide	ND	200		µg/L	20	8/27/2015 5:29:56 AM	R28474
Carbon Tetrachloride	ND	20		µg/L	20	8/27/2015 5:29:56 AM	R28474
Chlorobenzene	ND	20		µg/L	20	8/27/2015 5:29:56 AM	R28474
Chloroethane	ND	40		µg/L	20	8/27/2015 5:29:56 AM	R28474
Chloroform	ND	20		µg/L	20	8/27/2015 5:29:56 AM	R28474
Chloromethane	ND	60		µg/L	20	8/27/2015 5:29:56 AM	R28474
2-Chlorotoluene	ND	20		µg/L	20	8/27/2015 5:29:56 AM	R28474
4-Chlorotoluene	ND	20		µg/L	20	8/27/2015 5:29:56 AM	R28474
cis-1,2-DCE	ND	20		µg/L	20	8/27/2015 5:29:56 AM	R28474
cis-1,3-Dichloropropene	ND	20		µg/L	20	8/27/2015 5:29:56 AM	R28474
1,2-Dibromo-3-chloropropane	ND	40		µg/L	20	8/27/2015 5:29:56 AM	R28474
Dibromochloromethane	ND	20		µg/L	20	8/27/2015 5:29:56 AM	R28474
Dibromomethane	ND	20		µg/L	20	8/27/2015 5:29:56 AM	R28474
1,2-Dichlorobenzene	ND	20		µg/L	20	8/27/2015 5:29:56 AM	R28474
1,3-Dichlorobenzene	ND	20		µg/L	20	8/27/2015 5:29:56 AM	R28474
1,4-Dichlorobenzene	ND	20		µg/L	20	8/27/2015 5:29:56 AM	R28474
Dichlorodifluoromethane	ND	20		µg/L	20	8/27/2015 5:29:56 AM	R28474
1,1-Dichloroethane	ND	20		µg/L	20	8/27/2015 5:29:56 AM	R28474
1,1-Dichloroethene	ND	20		µg/L	20	8/27/2015 5:29:56 AM	R28474
1,2-Dichloropropane	ND	20		µg/L	20	8/27/2015 5:29:56 AM	R28474
1,3-Dichloropropane	ND	20		µg/L	20	8/27/2015 5:29:56 AM	R28474
2,2-Dichloropropane	ND	40		µg/L	20	8/27/2015 5:29:56 AM	R28474
1,1-Dichloropropene	ND	20		µg/L	20	8/27/2015 5:29:56 AM	R28474
Hexachlorobutadiene	ND	20		µg/L	20	8/27/2015 5:29:56 AM	R28474

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order: 1508C52

Date Reported: 9/15/2015

CLIENT: Western Refining Southwest, Inc.
Project: Refinery Wells 8-25-15
Lab ID: 1508C52-007A

Client Sample ID: MW-31
Collection Date: 8/25/2015 7:30:00 AM
Matrix: Aqueous

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES				Analyst: DJF			
2-Hexanone	ND	200		µg/L	20	8/27/2015 5:29:56 AM	R28474
Isopropylbenzene	100	20		µg/L	20	8/27/2015 5:29:56 AM	R28474
4-Isopropyltoluene	ND	20		µg/L	20	8/27/2015 5:29:56 AM	R28474
4-Methyl-2-pentanone	ND	200		µg/L	20	8/27/2015 5:29:56 AM	R28474
Methylene Chloride	ND	60		µg/L	20	8/27/2015 5:29:56 AM	R28474
n-Butylbenzene	ND	60		µg/L	20	8/27/2015 5:29:56 AM	R28474
n-Propylbenzene	290	20		µg/L	20	8/27/2015 5:29:56 AM	R28474
sec-Butylbenzene	42	20		µg/L	20	8/27/2015 5:29:56 AM	R28474
Styrene	ND	20		µg/L	20	8/27/2015 5:29:56 AM	R28474
tert-Butylbenzene	ND	20		µg/L	20	8/27/2015 5:29:56 AM	R28474
1,1,1,2-Tetrachloroethane	ND	20		µg/L	20	8/27/2015 5:29:56 AM	R28474
1,1,2,2-Tetrachloroethane	ND	40		µg/L	20	8/27/2015 5:29:56 AM	R28474
Tetrachloroethene (PCE)	ND	20		µg/L	20	8/27/2015 5:29:56 AM	R28474
trans-1,2-DCE	ND	20		µg/L	20	8/27/2015 5:29:56 AM	R28474
trans-1,3-Dichloropropene	ND	20		µg/L	20	8/27/2015 5:29:56 AM	R28474
1,2,3-Trichlorobenzene	ND	20		µg/L	20	8/27/2015 5:29:56 AM	R28474
1,2,4-Trichlorobenzene	ND	20		µg/L	20	8/27/2015 5:29:56 AM	R28474
1,1,1-Trichloroethane	ND	20		µg/L	20	8/27/2015 5:29:56 AM	R28474
1,1,2-Trichloroethane	ND	20		µg/L	20	8/27/2015 5:29:56 AM	R28474
Trichloroethene (TCE)	ND	20		µg/L	20	8/27/2015 5:29:56 AM	R28474
Trichlorofluoromethane	ND	20		µg/L	20	8/27/2015 5:29:56 AM	R28474
1,2,3-Trichloropropane	ND	40		µg/L	20	8/27/2015 5:29:56 AM	R28474
Vinyl chloride	ND	20		µg/L	20	8/27/2015 5:29:56 AM	R28474
Xylenes, Total	3800	30		µg/L	20	8/27/2015 5:29:56 AM	R28474
Surr: 1,2-Dichloroethane-d4	98.7	70-130		%REC	20	8/27/2015 5:29:56 AM	R28474
Surr: 4-Bromofluorobenzene	95.9	70-130		%REC	20	8/27/2015 5:29:56 AM	R28474
Surr: Dibromofluoromethane	106	70-130		%REC	20	8/27/2015 5:29:56 AM	R28474
Surr: Toluene-d8	95.7	70-130		%REC	20	8/27/2015 5:29:56 AM	R28474

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
				Page 44 of 67

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order: 1508C52

Date Reported: 9/15/2015

CLIENT: Western Refining Southwest, Inc.
Project: Refinery Wells 8-25-15
Lab ID: 1508C52-007B

Client Sample ID: MW-31
Collection Date: 8/25/2015 7:30:00 AM
Matrix: Aqueous

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	45	2.5		mg/L	50	8/26/2015 10:34:46 PM	R28483
Surr: BFB	99.4	57.8-137		%REC	50	8/26/2015 10:34:46 PM	R28483

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order: 1508C52

Date Reported: 9/15/2015

CLIENT: Western Refining Southwest, Inc.
Project: Refinery Wells 8-25-15
Lab ID: 1508C52-007C

Client Sample ID: MW-31
Collection Date: 8/25/2015 7:30:00 AM
Matrix: Aqueous

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D: DIESEL RANGE							Analyst: TOM
Diesel Range Organics (DRO)	4.2	0.20		mg/L	1	8/26/2015 7:54:10 PM	20987
Motor Oil Range Organics (MRO)	ND	2.5		mg/L	1	8/26/2015 7:54:10 PM	20987
Surr: DNOP	105	84.6-165		%REC	1	8/26/2015 7:54:10 PM	20987

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order: 1508C52

Date Reported: 9/15/2015

CLIENT: Western Refining Southwest, Inc.
Project: Refinery Wells 8-25-15
Lab ID: 1508C52-007D

Client Sample ID: MW-31
Collection Date: 8/25/2015 7:30:00 AM
Matrix: Aqueous

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 7470: MERCURY							Analyst: MED
Mercury	ND	0.00020		mg/L	1	9/2/2015 12:55:41 PM	21096
EPA 6010B: TOTAL RECOVERABLE METALS							Analyst: MED
Arsenic	ND	0.020		mg/L	1	9/2/2015 9:59:56 AM	21082
Barium	1.4	0.10		mg/L	5	9/2/2015 10:21:26 AM	21082
Cadmium	ND	0.0020		mg/L	1	9/2/2015 9:59:56 AM	21082
Chromium	ND	0.0060		mg/L	1	9/2/2015 9:59:56 AM	21082
Lead	ND	0.0050		mg/L	1	9/2/2015 9:59:56 AM	21082
Selenium	ND	0.050		mg/L	1	9/2/2015 9:59:56 AM	21082
Silver	ND	0.0050		mg/L	1	9/2/2015 9:59:56 AM	21082

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order: 1508C52

Date Reported: 9/15/2015

CLIENT: Western Refining Southwest, Inc.
Project: Refinery Wells 8-25-15
Lab ID: 1508C52-007E

Client Sample ID: MW-31
Collection Date: 8/25/2015 7:30:00 AM
Matrix: Aqueous

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
CARBON DIOXIDE							Analyst: JRR
Total Carbon Dioxide	1100	2.5	H	mg CO2/L	2.5	8/28/2015 12:55:02 PM	R28559
EPA METHOD 300.0: ANIONS							Analyst: LGT
Fluoride	ND	0.10		mg/L	1	8/26/2015 3:44:31 PM	R28493
Chloride	200	10		mg/L	20	8/26/2015 3:56:55 PM	R28493
Nitrogen, Nitrite (As N)	ND	0.10		mg/L	1	8/26/2015 3:44:31 PM	R28493
Bromide	ND	0.10		mg/L	1	8/26/2015 3:44:31 PM	R28493
Nitrogen, Nitrate (As N)	0.63	0.10		mg/L	1	8/26/2015 3:44:31 PM	R28493
Phosphorus, Orthophosphate (As P')	ND	0.50		mg/L	1	8/26/2015 3:44:31 PM	R28493
Sulfate	17	0.50		mg/L	1	8/26/2015 3:44:31 PM	R28493
SM2510B: SPECIFIC CONDUCTANCE							Analyst: JRR
Conductivity	2800	0.010		µmhos/cm	1	8/27/2015 7:16:17 PM	R28535
SM2320B: ALKALINITY							Analyst: JRR
Bicarbonate (As CaCO3)	1264	50.00		mg/L CaCO3	2.5	8/28/2015 12:55:02 PM	R28559
Carbonate (As CaCO3)	ND	5.000		mg/L CaCO3	2.5	8/28/2015 12:55:02 PM	R28559
Total Alkalinity (as CaCO3)	1264	50.00		mg/L CaCO3	2.5	8/28/2015 12:55:02 PM	R28559
SM2540C MOD: TOTAL DISSOLVED SOLIDS							Analyst: KS
Total Dissolved Solids	1740	40.0	*D	mg/L	1	8/31/2015 5:27:00 PM	21029

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Analytical ReportLab Order: **1508C52****Hall Environmental Analysis Laboratory, Inc.**Date Reported: **9/15/2015****CLIENT:** Western Refining Southwest, Inc.**Client Sample ID:** MW-31**Project:** Refinery Wells 8-25-15**Collection Date:** 8/25/2015 7:30:00 AM**Lab ID:** 1508C52-007F**Matrix:** Aqueous

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 6010B: DISSOLVED METALS							Analyst: MED
Arsenic	ND	0.020		mg/L	1	8/28/2015 2:20:08 PM	A28540
Barium	1.4	0.10		mg/L	5	8/28/2015 3:38:33 PM	A28540
Cadmium	ND	0.0020		mg/L	1	8/28/2015 2:20:08 PM	A28540
Calcium	110	5.0		mg/L	5	8/28/2015 3:38:33 PM	A28540
Chromium	ND	0.0060		mg/L	1	8/28/2015 2:20:08 PM	A28540
Copper	ND	0.0060		mg/L	1	8/28/2015 2:20:08 PM	A28540
Iron	0.26	0.020		mg/L	1	8/28/2015 2:20:08 PM	A28540
Lead	ND	0.0050		mg/L	1	8/28/2015 2:20:08 PM	A28540
Magnesium	45	1.0		mg/L	1	8/28/2015 2:20:08 PM	A28540
Manganese	1.1	0.010		mg/L	5	8/28/2015 3:38:33 PM	A28540
Potassium	4.4	1.0		mg/L	1	8/28/2015 2:20:08 PM	A28540
Selenium	ND	0.050		mg/L	1	8/28/2015 2:20:08 PM	A28540
Silver	ND	0.0050		mg/L	1	8/28/2015 2:20:08 PM	A28540
Sodium	500	5.0		mg/L	5	8/28/2015 3:38:33 PM	A28540
Uranium	ND	0.10		mg/L	1	8/28/2015 2:20:08 PM	A28540
Zinc	0.031	0.020		mg/L	1	8/28/2015 2:20:08 PM	A28540

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
				Page 49 of 67

Analytical Report

Lab Order: 1508C52

Hall Environmental Analysis Laboratory, Inc.

Date Reported: 9/15/2015

CLIENT: Western Refining Southwest, Inc.
Project: Refinery Wells 8-25-15
Lab ID: 1508C52-008A

Client Sample ID: Trip Blank
Collection Date:
Matrix: Trip Blank

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: DJF
Benzene	ND	1.0		µg/L	1	8/27/2015 1:41:57 PM	R28514
Toluene	ND	1.0		µg/L	1	8/27/2015 1:41:57 PM	R28514
Ethylbenzene	ND	1.0		µg/L	1	8/27/2015 1:41:57 PM	R28514
Methyl tert-butyl ether (MTBE)	ND	1.0		µg/L	1	8/27/2015 1:41:57 PM	R28514
1,2,4-Trimethylbenzene	ND	1.0		µg/L	1	8/27/2015 1:41:57 PM	R28514
1,3,5-Trimethylbenzene	ND	1.0		µg/L	1	8/27/2015 1:41:57 PM	R28514
1,2-Dichloroethane (EDC)	ND	1.0		µg/L	1	8/27/2015 1:41:57 PM	R28514
1,2-Dibromoethane (EDB)	ND	1.0		µg/L	1	8/27/2015 1:41:57 PM	R28514
Naphthalene	ND	2.0		µg/L	1	8/27/2015 1:41:57 PM	R28514
1-Methylnaphthalene	ND	4.0		µg/L	1	8/27/2015 1:41:57 PM	R28514
2-Methylnaphthalene	ND	4.0		µg/L	1	8/27/2015 1:41:57 PM	R28514
Acetone	ND	10		µg/L	1	8/27/2015 1:41:57 PM	R28514
Bromobenzene	ND	1.0		µg/L	1	8/27/2015 1:41:57 PM	R28514
Bromodichloromethane	ND	1.0		µg/L	1	8/27/2015 1:41:57 PM	R28514
Bromoform	ND	1.0		µg/L	1	8/27/2015 1:41:57 PM	R28514
Bromomethane	ND	3.0		µg/L	1	8/27/2015 1:41:57 PM	R28514
2-Butanone	ND	10		µg/L	1	8/27/2015 1:41:57 PM	R28514
Carbon disulfide	ND	10		µg/L	1	8/27/2015 1:41:57 PM	R28514
Carbon Tetrachloride	ND	1.0		µg/L	1	8/27/2015 1:41:57 PM	R28514
Chlorobenzene	ND	1.0		µg/L	1	8/27/2015 1:41:57 PM	R28514
Chloroethane	ND	2.0		µg/L	1	8/27/2015 1:41:57 PM	R28514
Chloroform	ND	1.0		µg/L	1	8/27/2015 1:41:57 PM	R28514
Chloromethane	ND	3.0		µg/L	1	8/27/2015 1:41:57 PM	R28514
2-Chlorotoluene	ND	1.0		µg/L	1	8/27/2015 1:41:57 PM	R28514
4-Chlorotoluene	ND	1.0		µg/L	1	8/27/2015 1:41:57 PM	R28514
cis-1,2-DCE	ND	1.0		µg/L	1	8/27/2015 1:41:57 PM	R28514
cis-1,3-Dichloropropene	ND	1.0		µg/L	1	8/27/2015 1:41:57 PM	R28514
1,2-Dibromo-3-chloropropane	ND	2.0		µg/L	1	8/27/2015 1:41:57 PM	R28514
Dibromochloromethane	ND	1.0		µg/L	1	8/27/2015 1:41:57 PM	R28514
Dibromomethane	ND	1.0		µg/L	1	8/27/2015 1:41:57 PM	R28514
1,2-Dichlorobenzene	ND	1.0		µg/L	1	8/27/2015 1:41:57 PM	R28514
1,3-Dichlorobenzene	ND	1.0		µg/L	1	8/27/2015 1:41:57 PM	R28514
1,4-Dichlorobenzene	ND	1.0		µg/L	1	8/27/2015 1:41:57 PM	R28514
Dichlorodifluoromethane	ND	1.0		µg/L	1	8/27/2015 1:41:57 PM	R28514
1,1-Dichloroethane	ND	1.0		µg/L	1	8/27/2015 1:41:57 PM	R28514
1,1-Dichloroethene	ND	1.0		µg/L	1	8/27/2015 1:41:57 PM	R28514
1,2-Dichloropropane	ND	1.0		µg/L	1	8/27/2015 1:41:57 PM	R28514
1,3-Dichloropropane	ND	1.0		µg/L	1	8/27/2015 1:41:57 PM	R28514
2,2-Dichloropropane	ND	2.0		µg/L	1	8/27/2015 1:41:57 PM	R28514
1,1-Dichloropropene	ND	1.0		µg/L	1	8/27/2015 1:41:57 PM	R28514
Hexachlorobutadiene	ND	1.0		µg/L	1	8/27/2015 1:41:57 PM	R28514

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order: 1508C52

Date Reported: 9/15/2015

CLIENT: Western Refining Southwest, Inc.
Project: Refinery Wells 8-25-15
Lab ID: 1508C52-008A

Client Sample ID: Trip Blank
Collection Date:
Matrix: Trip Blank

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: DJF
2-Hexanone	ND	10		µg/L	1	8/27/2015 1:41:57 PM	R28514
Isopropylbenzene	ND	1.0		µg/L	1	8/27/2015 1:41:57 PM	R28514
4-Isopropyltoluene	ND	1.0		µg/L	1	8/27/2015 1:41:57 PM	R28514
4-Methyl-2-pentanone	ND	10		µg/L	1	8/27/2015 1:41:57 PM	R28514
Methylene Chloride	ND	3.0		µg/L	1	8/27/2015 1:41:57 PM	R28514
n-Butylbenzene	ND	3.0		µg/L	1	8/27/2015 1:41:57 PM	R28514
n-Propylbenzene	ND	1.0		µg/L	1	8/27/2015 1:41:57 PM	R28514
sec-Butylbenzene	ND	1.0		µg/L	1	8/27/2015 1:41:57 PM	R28514
Styrene	ND	1.0		µg/L	1	8/27/2015 1:41:57 PM	R28514
tert-Butylbenzene	ND	1.0		µg/L	1	8/27/2015 1:41:57 PM	R28514
1,1,1,2-Tetrachloroethane	ND	1.0		µg/L	1	8/27/2015 1:41:57 PM	R28514
1,1,2,2-Tetrachloroethane	ND	2.0		µg/L	1	8/27/2015 1:41:57 PM	R28514
Tetrachloroethene (PCE)	ND	1.0		µg/L	1	8/27/2015 1:41:57 PM	R28514
trans-1,2-DCE	ND	1.0		µg/L	1	8/27/2015 1:41:57 PM	R28514
trans-1,3-Dichloropropene	ND	1.0		µg/L	1	8/27/2015 1:41:57 PM	R28514
1,2,3-Trichlorobenzene	ND	1.0		µg/L	1	8/27/2015 1:41:57 PM	R28514
1,2,4-Trichlorobenzene	ND	1.0		µg/L	1	8/27/2015 1:41:57 PM	R28514
1,1,1-Trichloroethane	ND	1.0		µg/L	1	8/27/2015 1:41:57 PM	R28514
1,1,2-Trichloroethane	ND	1.0		µg/L	1	8/27/2015 1:41:57 PM	R28514
Trichloroethene (TCE)	ND	1.0		µg/L	1	8/27/2015 1:41:57 PM	R28514
Trichlorofluoromethane	ND	1.0		µg/L	1	8/27/2015 1:41:57 PM	R28514
1,2,3-Trichloropropane	ND	2.0		µg/L	1	8/27/2015 1:41:57 PM	R28514
Vinyl chloride	ND	1.0		µg/L	1	8/27/2015 1:41:57 PM	R28514
Xylenes, Total	ND	1.5		µg/L	1	8/27/2015 1:41:57 PM	R28514
Surr: 1,2-Dichloroethane-d4	97.4	70-130		%REC	1	8/27/2015 1:41:57 PM	R28514
Surr: 4-Bromofluorobenzene	106	70-130		%REC	1	8/27/2015 1:41:57 PM	R28514
Surr: Dibromofluoromethane	108	70-130		%REC	1	8/27/2015 1:41:57 PM	R28514
Surr: Toluene-d8	94.8	70-130		%REC	1	8/27/2015 1:41:57 PM	R28514

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
				Page 51 of 67

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order: 1508C52

Date Reported: 9/15/2015

CLIENT: Western Refining Southwest, Inc.
Project: Refinery Wells 8-25-15
Lab ID: 1508C52-008B

Client Sample ID: Trip Blank
Collection Date:
Matrix: Trip Blank

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	ND	0.050		mg/L	1	8/26/2015 10:59:41 PM	R28483
Surr: BFB	84.0	57.8-137		%REC	1	8/26/2015 10:59:41 PM	R28483

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1508C52

15-Sep-15

Client: Western Refining Southwest, Inc.

Project: Refinery Wells 8-25-15

Sample ID MB	SampType: MBLK		TestCode: EPA Method 300.0: Anions							
Client ID: PBW	Batch ID: R28493		RunNo: 28493							
Prep Date:	Analysis Date: 8/26/2015		SeqNo: 861510		Units: mg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	ND	0.10								
Chloride	ND	0.50								
Nitrogen, Nitrite (As N)	ND	0.10								
Bromide	ND	0.10								
Nitrogen, Nitrate (As N)	ND	0.10								
Phosphorus, Orthophosphate (As P)	ND	0.50								
Sulfate	ND	0.50								

Sample ID LCS	SampType: LCS		TestCode: EPA Method 300.0: Anions							
Client ID: LCSW	Batch ID: R28493		RunNo: 28493							
Prep Date:	Analysis Date: 8/26/2015		SeqNo: 861511		Units: mg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	0.46	0.10	0.5000	0	91.4	90	110			
Chloride	4.9	0.50	5.000	0	98.0	90	110			
Nitrogen, Nitrite (As N)	0.97	0.10	1.000	0	97.3	90	110			
Bromide	2.5	0.10	2.500	0	99.2	90	110			
Nitrogen, Nitrate (As N)	2.6	0.10	2.500	0	103	90	110			
Phosphorus, Orthophosphate (As P)	4.7	0.50	5.000	0	95.0	90	110			
Sulfate	9.9	0.50	10.00	0	98.8	90	110			

Sample ID 1508C52-001EMS	SampType: MS		TestCode: EPA Method 300.0: Anions							
Client ID: MW-29	Batch ID: R28493		RunNo: 28493							
Prep Date:	Analysis Date: 8/26/2015		SeqNo: 861513		Units: mg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	0.70	0.10	0.5000	0.2607	88.7	75.3	111			
Nitrogen, Nitrite (As N)	0.96	0.10	1.000	0	96.2	77.1	110			
Bromide	2.6	0.10	2.500	0.3351	92.5	84.6	106			
Nitrogen, Nitrate (As N)	3.0	0.10	2.500	0.5019	101	87.3	111			
Phosphorus, Orthophosphate (As P)	4.3	0.50	5.000	0	85.6	76.5	106			

Sample ID 1508C52-001EMSD	SampType: MSD		TestCode: EPA Method 300.0: Anions							
Client ID: MW-29	Batch ID: R28493		RunNo: 28493							
Prep Date:	Analysis Date: 8/26/2015		SeqNo: 861514		Units: mg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	0.71	0.10	0.5000	0.2607	90.3	75.3	111	1.12	20	
Nitrogen, Nitrite (As N)	0.95	0.10	1.000	0	94.9	77.1	110	1.29	20	
Bromide	2.6	0.10	2.500	0.3351	92.5	84.6	106	0.0151	20	

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1508C52

15-Sep-15

Client: Western Refining Southwest, Inc.

Project: Refinery Wells 8-25-15

Sample ID	1508C52-001EMSD		SampType: MSD		TestCode: EPA Method 300.0: Anions					
Client ID:	MW-29		Batch ID: R28493		RunNo: 28493					
Prep Date:			Analysis Date: 8/26/2015		SeqNo: 861514		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Nitrogen, Nitrate (As N)	3.0	0.10	2.500	0.5019	101	87.3	111	0.204	20	
Phosphorus, Orthophosphate (As P)	4.3	0.50	5.000	0	86.2	76.5	106	0.675	20	

Sample ID	MB	SampType: MBLK		TestCode: EPA Method 300.0: Anions						
Client ID:	PBW	Batch ID: R28611		RunNo: 28611						
Prep Date:		Analysis Date: 9/1/2015		SeqNo: 865519		Units: mg/L				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	0.50								
Sulfate	ND	0.50								

Sample ID	LCS		SampType: LCS		TestCode: EPA Method 300.0: Anions					
Client ID:	LCSW		Batch ID: R28611		RunNo: 28611					
Prep Date:			Analysis Date: 9/1/2015		SeqNo: 865520		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	4.9	0.50	5.000	0	97.7	90	110			
Sulfate	10	0.50	10.00	0	99.6	90	110			

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1508C52

15-Sep-15

Client: Western Refining Southwest, Inc.

Project: Refinery Wells 8-25-15

Sample ID	LCS-20987		SampType: LCS		TestCode: EPA Method 8015D: Diesel Range					
Client ID:	LCSW		Batch ID: 20987		RunNo: 28473					
Prep Date:	8/26/2015		Analysis Date: 8/26/2015		SeqNo: 861178		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	3.7	0.20	2.500	0	149	67.3	174			
Surr: DNOP	0.32		0.2500		126	84.6	165			

Sample ID	MB-20987	SampType: MBLK			TestCode: EPA Method 8015D: Diesel Range					
Client ID:	PBW	Batch ID: 20987			RunNo: 28473					
Prep Date:	8/26/2015	Analysis Date: 8/26/2015			SeqNo: 861420		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	0.20								
Motor Oil Range Organics (MRO)	ND	2.5								
Surr: DNOP	0.55		0.5000		109	84.6	165			

Sample ID	1508C52-001CMS		SampType: MS		TestCode: EPA Method 8015D: Diesel Range					
Client ID:	MW-29		Batch ID: 20987		RunNo: 28473					
Prep Date:	8/26/2015		Analysis Date: 8/26/2015		SeqNo: 861429		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	3.1	0.20	2.500	0	123	67.2	210			
Surr: DNOP	0.26		0.2500		103	84.6	165			

Sample ID	1508C52-001CMSD		SampType: MSD		TestCode: EPA Method 8015D: Diesel Range					
Client ID:	MW-29		Batch ID: 20987		RunNo: 28473					
Prep Date:	8/26/2015		Analysis Date: 8/26/2015		SeqNo: 861430		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	2.9	0.20	2.500	0	118	67.2	210	4.65	33.9	
Surr: DNOP	0.25		0.2500		98.9	84.6	165	0	0	

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1508C52

15-Sep-15

Client: Western Refining Southwest, Inc.

Project: Refinery Wells 8-25-15

Sample ID 5ML RB	SampType: MBLK		TestCode: EPA Method 8015D: Gasoline Range							
Client ID: PBW	Batch ID: R28483		RunNo: 28483							
Prep Date:	Analysis Date: 8/26/2015		SeqNo: 860964		Units: mg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	0.050								
Surr: BFB	17		20.00		86.4	57.8	137			

Sample ID 2.5UG GRO LCS	SampType: LCS		TestCode: EPA Method 8015D: Gasoline Range							
Client ID: LCSW	Batch ID: R28483		RunNo: 28483							
Prep Date:	Analysis Date: 8/26/2015		SeqNo: 860965		Units: mg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	0.51	0.050	0.5000	0	102	80	120			
Surr: BFB	19		20.00		93.5	57.8	137			

Sample ID 1508C52-002BMS	SampType: MS		TestCode: EPA Method 8015D: Gasoline Range							
Client ID: MW-30	Batch ID: R28483		RunNo: 28483							
Prep Date:	Analysis Date: 8/26/2015		SeqNo: 861040		Units: mg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	170	5.0	50.00	118.5	102	70	130			
Surr: BFB	2000		2000		101	57.8	137			

Sample ID 1508C52-002BMSD	SampType: MSD		TestCode: EPA Method 8015D: Gasoline Range							
Client ID: MW-30	Batch ID: R28483		RunNo: 28483							
Prep Date:	Analysis Date: 8/26/2015		SeqNo: 861059		Units: mg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	170	5.0	50.00	118.5	100	70	130	0.509	20	
Surr: BFB	2100		2000		106	57.8	137	0	0	

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1508C52

15-Sep-15

Client: Western Refining Southwest, Inc.

Project: Refinery Wells 8-25-15

Sample ID	rb	SampType: MBLK			TestCode: EPA Method 8260B: VOLATILES					
Client ID:	PBW	Batch ID: R28474			RunNo: 28474					
Prep Date:		Analysis Date: 8/26/2015			SeqNo: 861384	Units: µg/L				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	1.0								
Toluene	ND	1.0								
Ethylbenzene	ND	1.0								
Methyl tert-butyl ether (MTBE)	ND	1.0								
1,2,4-Trimethylbenzene	ND	1.0								
1,3,5-Trimethylbenzene	ND	1.0								
1,2-Dichloroethane (EDC)	ND	1.0								
1,2-Dibromoethane (EDB)	ND	1.0								
Naphthalene	ND	2.0								
1-Methylnaphthalene	ND	4.0								
2-Methylnaphthalene	ND	4.0								
Acetone	ND	10								
Bromobenzene	ND	1.0								
Bromodichloromethane	ND	1.0								
Bromoform	ND	1.0								
Bromomethane	ND	3.0								
2-Butanone	ND	10								
Carbon disulfide	ND	10								
Carbon Tetrachloride	ND	1.0								
Chlorobenzene	ND	1.0								
Chloroethane	ND	2.0								
Chloroform	ND	1.0								
Chloromethane	ND	3.0								
2-Chlorotoluene	ND	1.0								
4-Chlorotoluene	ND	1.0								
cis-1,2-DCE	ND	1.0								
cis-1,3-Dichloropropene	ND	1.0								
1,2-Dibromo-3-chloropropane	ND	2.0								
Dibromochloromethane	ND	1.0								
Dibromomethane	ND	1.0								
1,2-Dichlorobenzene	ND	1.0								
1,3-Dichlorobenzene	ND	1.0								
1,4-Dichlorobenzene	ND	1.0								
Dichlorodifluoromethane	ND	1.0								
1,1-Dichloroethane	ND	1.0								
1,1-Dichloroethene	ND	1.0								
1,2-Dichloropropane	ND	1.0								
1,3-Dichloropropane	ND	1.0								
2,2-Dichloropropane	ND	2.0								

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1508C52

15-Sep-15

Client: Western Refining Southwest, Inc.

Project: Refinery Wells 8-25-15

Sample ID	rb	SampType: MBLK				TestCode: EPA Method 8260B: VOLATILES				
Client ID:	PBW	Batch ID: R28474				RunNo: 28474				
Prep Date:		Analysis Date: 8/26/2015				SeqNo: 861384	Units: µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,1-Dichloropropene	ND	1.0								
Hexachlorobutadiene	ND	1.0								
2-Hexanone	ND	10								
Isopropylbenzene	ND	1.0								
4-Isopropyltoluene	ND	1.0								
4-Methyl-2-pentanone	ND	10								
Methylene Chloride	ND	3.0								
n-Butylbenzene	ND	3.0								
n-Propylbenzene	ND	1.0								
sec-Butylbenzene	ND	1.0								
Styrene	ND	1.0								
tert-Butylbenzene	ND	1.0								
1,1,1,2-Tetrachloroethane	ND	1.0								
1,1,2,2-Tetrachloroethane	ND	2.0								
Tetrachloroethene (PCE)	ND	1.0								
trans-1,2-DCE	ND	1.0								
trans-1,3-Dichloropropene	ND	1.0								
1,2,3-Trichlorobenzene	ND	1.0								
1,2,4-Trichlorobenzene	ND	1.0								
1,1,1-Trichloroethane	ND	1.0								
1,1,2-Trichloroethane	ND	1.0								
Trichloroethene (TCE)	ND	1.0								
Trichlorofluoromethane	ND	1.0								
1,2,3-Trichloropropane	ND	2.0								
Vinyl chloride	ND	1.0								
Xylenes, Total	ND	1.5								
Surr: 1,2-Dichloroethane-d4	9.1		10.00		91.3	70	130			
Surr: 4-Bromofluorobenzene	10		10.00		103	70	130			
Surr: Dibromofluoromethane	11		10.00		109	70	130			
Surr: Toluene-d8	9.5		10.00		95.0	70	130			

Sample ID	100ng lcs	SampType: LCS				TestCode: EPA Method 8260B: VOLATILES				
Client ID:	LCSW	Batch ID: R28474				RunNo: 28474				
Prep Date:		Analysis Date: 8/26/2015				SeqNo: 861385	Units: µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	21	1.0	20.00	0	104	70	130			
Toluene	20	1.0	20.00	0	101	70	130			
Chlorobenzene	19	1.0	20.00	0	97.0	70	130			

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1508C52

15-Sep-15

Client: Western Refining Southwest, Inc.

Project: Refinery Wells 8-25-15

Sample ID	100ng lcs		SampType: LCS		TestCode: EPA Method 8260B: VOLATILES					
Client ID:	LCSW		Batch ID: R28474		RunNo: 28474					
Prep Date:			Analysis Date: 8/26/2015		SeqNo: 861385		Units: µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,1-Dichloroethene	20	1.0	20.00	0	100	70	130			
Trichloroethene (TCE)	21	1.0	20.00	0	103	70	130			
Surr: 1,2-Dichloroethane-d4	9.5		10.00		94.6	70	130			
Surr: 4-Bromofluorobenzene	11		10.00		107	70	130			
Surr: Dibromofluoromethane	10		10.00		104	70	130			
Surr: Toluene-d8	9.1		10.00		91.2	70	130			

Sample ID	rb	SampType: MBLK			TestCode: EPA Method 8260B: VOLATILES					
Client ID:	PBW	Batch ID: R28514			RunNo: 28514					
Prep Date:		Analysis Date: 8/27/2015			SeqNo: 862246		Units: µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	1.0								
Toluene	ND	1.0								
Ethylbenzene	ND	1.0								
Methyl tert-butyl ether (MTBE)	ND	1.0								
1,2,4-Trimethylbenzene	ND	1.0								
1,3,5-Trimethylbenzene	ND	1.0								
1,2-Dichloroethane (EDC)	ND	1.0								
1,2-Dibromoethane (EDB)	ND	1.0								
Naphthalene	ND	2.0								
1-Methylnaphthalene	ND	4.0								
2-Methylnaphthalene	ND	4.0								
Acetone	ND	10								
Bromobenzene	ND	1.0								
Bromodichloromethane	ND	1.0								
Bromoform	ND	1.0								
Bromomethane	ND	3.0								
2-Butanone	ND	10								
Carbon disulfide	ND	10								
Carbon Tetrachloride	ND	1.0								
Chlorobenzene	ND	1.0								
Chloroethane	ND	2.0								
Chloroform	ND	1.0								
Chloromethane	ND	3.0								
2-Chlorotoluene	ND	1.0								
4-Chlorotoluene	ND	1.0								
cis-1,2-DCE	ND	1.0								
cis-1,3-Dichloropropene	ND	1.0								

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1508C52

15-Sep-15

Client: Western Refining Southwest, Inc.

Project: Refinery Wells 8-25-15

Sample ID	rb	SampType: MBLK			TestCode: EPA Method 8260B: VOLATILES					
Client ID:	PBW	Batch ID: R28514			RunNo: 28514					
Prep Date:		Analysis Date: 8/27/2015			SeqNo: 862246	Units: µg/L				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,2-Dibromo-3-chloropropane	ND	2.0								
Dibromochloromethane	ND	1.0								
Dibromomethane	ND	1.0								
1,2-Dichlorobenzene	ND	1.0								
1,3-Dichlorobenzene	ND	1.0								
1,4-Dichlorobenzene	ND	1.0								
Dichlorodifluoromethane	ND	1.0								
1,1-Dichloroethane	ND	1.0								
1,1-Dichloroethene	ND	1.0								
1,2-Dichloropropane	ND	1.0								
1,3-Dichloropropane	ND	1.0								
2,2-Dichloropropane	ND	2.0								
1,1-Dichloropropene	ND	1.0								
Hexachlorobutadiene	ND	1.0								
2-Hexanone	ND	10								
Isopropylbenzene	ND	1.0								
4-Isopropyltoluene	ND	1.0								
4-Methyl-2-pentanone	ND	10								
Methylene Chloride	ND	3.0								
n-Butylbenzene	ND	3.0								
n-Propylbenzene	ND	1.0								
sec-Butylbenzene	ND	1.0								
Styrene	ND	1.0								
tert-Butylbenzene	ND	1.0								
1,1,1,2-Tetrachloroethane	ND	1.0								
1,1,2,2-Tetrachloroethane	ND	2.0								
Tetrachloroethene (PCE)	ND	1.0								
trans-1,2-DCE	ND	1.0								
trans-1,3-Dichloropropene	ND	1.0								
1,2,3-Trichlorobenzene	ND	1.0								
1,2,4-Trichlorobenzene	ND	1.0								
1,1,1-Trichloroethane	ND	1.0								
1,1,2-Trichloroethane	ND	1.0								
Trichloroethene (TCE)	ND	1.0								
Trichlorofluoromethane	ND	1.0								
1,2,3-Trichloropropane	ND	2.0								
Vinyl chloride	ND	1.0								
Xylenes, Total	ND	1.5								
Surr: 1,2-Dichloroethane-d4	10		10.00		99.6	70	130			

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1508C52

15-Sep-15

Client: Western Refining Southwest, Inc.

Project: Refinery Wells 8-25-15

Sample ID	rb	SampType: MBLK			TestCode: EPA Method 8260B: VOLATILES					
Client ID:	PBW	Batch ID: R28514			RunNo: 28514					
Prep Date:		Analysis Date: 8/27/2015			SeqNo: 862246		Units: µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 4-Bromofluorobenzene	10		10.00		103	70	130			
Surr: Dibromofluoromethane	11		10.00		113	70	130			
Surr: Toluene-d8	9.9		10.00		99.3	70	130			

Sample ID	100ng lcs	SampType: LCS			TestCode: EPA Method 8260B: VOLATILES					
Client ID:	LCSW	Batch ID: R28514			RunNo: 28514					
Prep Date:		Analysis Date: 8/27/2015			SeqNo: 862247		Units: µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	21	1.0	20.00	0	107	70	130			
Toluene	22	1.0	20.00	0	109	70	130			
Chlorobenzene	21	1.0	20.00	0	107	70	130			
1,1-Dichloroethene	21	1.0	20.00	0	106	70	130			
Trichloroethene (TCE)	21	1.0	20.00	0	105	70	130			
Surr: 1,2-Dichloroethane-d4	9.8		10.00		98.1	70	130			
Surr: 4-Bromofluorobenzene	11		10.00		106	70	130			
Surr: Dibromofluoromethane	11		10.00		108	70	130			
Surr: Toluene-d8	10		10.00		102	70	130			

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1508C52

15-Sep-15

Client: Western Refining Southwest, Inc.

Project: Refinery Wells 8-25-15

Sample ID	MB-21096		SampType:	MBLK		TestCode:	EPA Method 7470: Mercury				
Client ID:	PBW		Batch ID:	21096		RunNo:	28621				
Prep Date:	9/1/2015		Analysis Date:	9/2/2015		SeqNo:	866014		Units: mg/L		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Mercury	ND	0.00020									

Sample ID	LCS-21096			SampType:	LCS		TestCode:	EPA Method 7470: Mercury			
Client ID:	LCSW			Batch ID:	21096		RunNo:	28621			
Prep Date:	9/1/2015			Analysis Date:	9/2/2015		SeqNo:	866015		Units:	mg/L
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Mercury	0.0051	0.00020	0.005000	0	103	80	120				

Sample ID	1508C52-001DMS		SampType: MS		TestCode: EPA Method 7470: Mercury					
Client ID:	MW-29		Batch ID: 21096		RunNo: 28621					
Prep Date:	9/1/2015		Analysis Date: 9/2/2015		SeqNo: 866018		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.0047	0.00020	0.005000	0	94.7	75	125			

Sample ID	1508C52-001DMSD			SampType:	MSD		TestCode:	EPA Method 7470: Mercury			
Client ID:	MW-29		Batch ID:	21096		RunNo:	28621				
Prep Date:	9/1/2015		Analysis Date:	9/2/2015		SeqNo:	866019		Units: mg/L		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Mercury	0.0047	0.00020	0.005000	0	93.6	75	125	1.14	20		

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1508C52

15-Sep-15

Client: Western Refining Southwest, Inc.

Project: Refinery Wells 8-25-15

Sample ID	MB		SampType: MBLK			TestCode: EPA Method 6010B: Dissolved Metals				
Client ID:	PBW		Batch ID: A28540			RunNo: 28540				
Prep Date:			Analysis Date: 8/28/2015			SeqNo: 863198		Units: mg/L		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	ND	0.020								
Barium	ND	0.020								
Cadmium	ND	0.0020								
Calcium	ND	1.0								
Chromium	ND	0.0060								
Copper	ND	0.0060								
Iron	ND	0.020								
Lead	ND	0.0050								
Magnesium	ND	1.0								
Manganese	ND	0.0020								
Potassium	ND	1.0								
Selenium	ND	0.050								
Silver	ND	0.0050								
Sodium	ND	1.0								
Uranium	ND	0.10								
Zinc	ND	0.020								

Sample ID	LCS		SampType: LCS			TestCode: EPA Method 6010B: Dissolved Metals				
Client ID:	LCSW		Batch ID: A28540			RunNo: 28540				
Prep Date:			Analysis Date: 8/28/2015			SeqNo: 863199		Units: mg/L		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	0.52	0.020	0.5000	0	103	80	120			
Barium	0.48	0.020	0.5000	0	96.3	80	120			
Cadmium	0.49	0.0020	0.5000	0	97.6	80	120			
Calcium	58	1.0	50.00	0	117	80	120			
Chromium	0.47	0.0060	0.5000	0	94.6	80	120			
Copper	0.49	0.0060	0.5000	0	97.9	80	120			
Iron	0.48	0.020	0.5000	0	95.9	80	120			
Lead	0.49	0.0050	0.5000	0	97.5	80	120			
Magnesium	57	1.0	50.00	0	114	80	120			
Manganese	0.47	0.0020	0.5000	0	93.8	80	120			
Potassium	55	1.0	50.00	0	110	80	120			
Selenium	0.49	0.050	0.5000	0	98.2	80	120			
Silver	0.099	0.0050	0.1000	0	99.1	80	120			
Sodium	56	1.0	50.00	0	112	80	120			
Uranium	0.48	0.10	0.5000	0	95.6	80	120			
Zinc	0.48	0.020	0.5000	0	96.3	80	120			

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1508C52

15-Sep-15

Client: Western Refining Southwest, Inc.

Project: Refinery Wells 8-25-15

Sample ID	MB	SampType: MBLK			TestCode: EPA Method 6010B: Dissolved Metals					
Client ID:	PBW	Batch ID: A28616			RunNo: 28616					
Prep Date:		Analysis Date: 9/2/2015			SeqNo: 865711		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Calcium	ND	1.0								
Sodium	ND	1.0								

Sample ID	LCS		SampType: LCS		TestCode: EPA Method 6010B: Dissolved Metals					
Client ID:	LCSW		Batch ID: A28616		RunNo: 28616					
Prep Date:			Analysis Date: 9/2/2015		SeqNo: 865712		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Calcium	48	1.0	50.00	0	95.3	80	120			
Sodium	48	1.0	50.00	0	95.9	80	120			

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1508C52

15-Sep-15

Client: Western Refining Southwest, Inc.

Project: Refinery Wells 8-25-15

Sample ID	MB-21082		SampType: MBLK		TestCode: EPA 6010B: Total Recoverable Metals					
Client ID:	PBW		Batch ID: 21082		RunNo: 28616					
Prep Date:	9/1/2015		Analysis Date: 9/2/2015		SeqNo: 865713		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	ND	0.020								
Barium	ND	0.020								
Cadmium	ND	0.0020								
Chromium	ND	0.0060								
Lead	ND	0.0050								
Selenium	ND	0.050								
Silver	ND	0.0050								

Sample ID	LCS-21082		SampType: LCS		TestCode: EPA 6010B: Total Recoverable Metals					
Client ID:	LCSW		Batch ID: 21082		RunNo: 28616					
Prep Date:	9/1/2015		Analysis Date: 9/2/2015		SeqNo: 865714		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	0.53	0.020	0.5000	0	106	80	120			
Barium	0.50	0.020	0.5000	0	99.4	80	120			
Cadmium	0.50	0.0020	0.5000	0	99.6	80	120			
Chromium	0.49	0.0060	0.5000	0	98.7	80	120			
Lead	0.50	0.0050	0.5000	0	100	80	120			
Selenium	0.50	0.050	0.5000	0	100	80	120			
Silver	0.10	0.0050	0.1000	0	101	80	120			

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1508C52

15-Sep-15

Client: Western Refining Southwest, Inc.

Project: Refinery Wells 8-25-15

Sample ID	mb-1		SampType: MBLK		TestCode: SM2320B: Alkalinity					
Client ID:	PBW		Batch ID: R28535		RunNo: 28535					
Prep Date:			Analysis Date: 8/27/2015		SeqNo: 863066		Units: mg/L CaCO3			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Alkalinity (as CaCO3)	ND	20.00								

Sample ID	lcs-1		SampType: LCS		TestCode: SM2320B: Alkalinity					
Client ID:	LCSW		Batch ID: R28535		RunNo: 28535					
Prep Date:			Analysis Date: 8/27/2015		SeqNo: 863067		Units: mg/L CaCO3			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Alkalinity (as CaCO3)	79.48	20.00	80.00	0	99.4	90	110			

Sample ID	mb-1		SampType: MBLK		TestCode: SM2320B: Alkalinity					
Client ID:	PBW		Batch ID: R28559		RunNo: 28559					
Prep Date:			Analysis Date: 8/28/2015		SeqNo: 863825		Units: mg/L CaCO3			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Alkalinity (as CaCO3)	ND	20.00								

Sample ID	lcs-1		SampType: LCS		TestCode: SM2320B: Alkalinity					
Client ID:	LCSW		Batch ID: R28559		RunNo: 28559					
Prep Date:			Analysis Date: 8/28/2015		SeqNo: 863826		Units: mg/L CaCO3			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Alkalinity (as CaCO3)	79.32	20.00	80.00	0	99.2	90	110			

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1508C52

15-Sep-15

Client: Western Refining Southwest, Inc.

Project: Refinery Wells 8-25-15

Sample ID	MB-21029		SampType:	MBLK		TestCode:	SM2540C MOD: Total Dissolved Solids				
Client ID:	PBW		Batch ID:	21029		RunNo:	28566				
Prep Date:	8/28/2015		Analysis Date:	8/31/2015		SeqNo:	863956		Units: mg/L		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Total Dissolved Solids	ND	20.0									

Sample ID	LCS-21029		SampType: LCS		TestCode: SM2540C MOD: Total Dissolved Solids					
Client ID:	LCSW		Batch ID: 21029		RunNo: 28566					
Prep Date:	8/28/2015		Analysis Date: 8/31/2015		SeqNo: 863957		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Dissolved Solids	1050	20.0	1000	0	105	80	120			

Sample ID	1508C52-001EMS		SampType: MS		TestCode: SM2540C MOD: Total Dissolved Solids					
Client ID:	MW-29		Batch ID: 21029		RunNo: 28566					
Prep Date:	8/28/2015		Analysis Date: 8/31/2015		SeqNo: 863959		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Dissolved Solids	2650	40.0	2000	582.0	104	80	120			D

Sample ID	1508C52-001EMSD		SampType: MSD		TestCode: SM2540C MOD: Total Dissolved Solids					
Client ID:	MW-29		Batch ID: 21029		RunNo: 28566					
Prep Date:	8/28/2015		Analysis Date: 8/31/2015		SeqNo: 863960		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Dissolved Solids	2650	40.0	2000	582.0	104	80	120	0	5	D

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit



Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

Sample Log-In Check List

Client Name: Western Refining Southw

Work Order Number: 1508C52

RcptNo: 1

Received by/date:

Logged By: Lindsay Mangin

08/26/15
8/26/2015 7:00:00 AM

Completed By: Lindsay Mangin

8/26/2015 8:19:03 AM

Reviewed By:

Chain of Custody

1. Custody seals intact on sample bottles?

Yes ☐

No ☐

Not Present ☒

2. Is Chain of Custody complete?

Yes ☒

No ☐

Not Present ☐

3. How was the sample delivered?

Courier

Log In

4. Was an attempt made to cool the samples?

Yes ☒

No ☐

NA ☐

5. Were all samples received at a temperature of $>0^{\circ}\text{C}$ to 6.0°C

Yes ☒

No ☐

NA ☐

6. Sample(s) in proper container(s)?

Yes ☒

No ☐

7. Sufficient sample volume for indicated test(s)?

Yes ☒

No ☐

8. Are samples (except VOA and ONG) properly preserved?

Yes ☒

No ☒

CS 08/26/15

9. Was preservative added to bottles?

Yes ☒

No ☒

NA ☐

10. VOA vials have zero headspace?

Yes ☒

No ☐

No VOA Vials ☐

11. Were any sample containers received broken?

Yes ☐

No ☒

12. Does paperwork match bottle labels?

Yes ☒

No ☐

(Note discrepancies on chain of custody)

13. Are matrices correctly identified on Chain of Custody?

Yes ☒

No ☐

14. Is it clear what analyses were requested?

Yes ☒

No ☐

15. Were all holding times able to be met?

Yes ☒

No ☐

(If no, notify customer for authorization.)

of preserved
bottles checked
for pH:

21
(<2 or >12 unless noted)

Adjusted?

yes

Checked by:

CS

Special Handling (if applicable)

16. Was client notified of all discrepancies with this order?

Yes ☐

No ☐

NA ☒

Person Notified:

Date:

By Whom:

Via:

☐ eMail

☐ Phone

☐ Fax

☐ In Person

Regarding:

Client Instructions:

17. Additional remarks: For metals analysis, added 1 ml HNO_3 to -002D and -006D for acceptance pH. Held in Log-in for 24 hours prior to analysis. CS 08/26/15

18. Cooler Information

Cooler No	Temp $^{\circ}\text{C}$	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	2.1	Good	Yes			

Chain-of-Custody Record

Client: Western Refining

Mailing Address: #50 CR 4990

Bloomfield, NM 87413

Phone #: 505-632-4135

email or Fax#:

QA/QC Package:

☐ Standard ☒ Level 4 (Full Validation)

Accreditation

☐ NELAP ☐ Other

☐ EDD (Type)

Sampler: Bob & Tracy

On Ice: ☒ Yes ☐ No

Sample Temperature: 2

Date Time Matrix Sample Request ID

8-25-15 7:30 H₂O MW-31

1-500ml amber

1-500ml HNO₃

1-500ml HNO₃

1-500ml

1-125ml H₂SO₄

Trip Blank

CS 08/26/15

Container Type and #

5-10A

1-500ml amber

1-500ml HNO₃

1-500ml HNO₃

1-500ml

1-125ml H₂SO₄

Preservative Type

HCl

amber

HNO₃

HNO₃

H₂SO₄

HEAL No.

1508052

-007

-007

-007

-007

-007

-008

Analysis Request

BTEX + MTBE + TMB's (8021)

BTEX + MTBE + TPH (Gas only)

TPH 8015B (GRO /)

TPH (Method 418.1)

EDB (Method 504.1)

PAH's (8310 or 8270 SIMS)

RCRA 8 Metals

Anions (F, Cl, NO₃, NO₂, PO₄, SO₄)

8081 Pesticides / 8082 PCB's

8260B (VOA)

8270 (Semi-VOA)

DRO-Ext. 8015B

Gen. Chem. Alk

Anions, CO₂

Dissolved Metals

Air Bubbles (Y or N)



**HALL ENVIRONMENTAL
ANALYSIS LABORATORY**

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

Tel. 505-345-3975 Fax 505-345-4107

Remarks:

Date Time

Received by:

Relinquished by:

Date:

8/25/15 1219

Shirley White

Robert Krabben

8/25/15 1851

8/25/15 1219

Shirley White

Robert Krabben

8/25/15 1851

08/26/15 0700



Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

September 09, 2015

Kelly Robinson

Western Refining Southwest, Inc.

#50 CR 4990

Bloomfield, NM 87413

TEL: (505) 632-4166

FAX (505) 632-3911

RE: Collection Wells 8-26-15

OrderNo.: 1508D34

Dear Kelly Robinson:

Hall Environmental Analysis Laboratory received 4 sample(s) on 8/27/2015 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to www.hallenvironmental.com or the state specific web sites. In order to properly interpret your results it is imperative that you review this report in its entirety. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. When necessary, data qualifiers are provided on both the sample analysis report and the QC summary report, both sections should be reviewed. All samples are reported, as received, unless otherwise indicated. Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH and residual chlorine are qualified as being analyzed outside of the recommended holding time.

Please don't hesitate to contact HEAL for any additional information or clarifications.

ADHS Cert #AZ0682 -- NMED-DWB Cert #NM9425 -- NMED-Micro Cert #NM0190

Sincerely,

A handwritten signature in black ink, appearing to read "Andy Freeman", with a stylized flourish at the end.

Andy Freeman

Laboratory Manager

4901 Hawkins NE

Albuquerque, NM 87109

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1508D34

Date Reported: 9/9/2015

CLIENT: Western Refining Southwest, Inc.

Client Sample ID: CW 0+60

Project: Collection Wells 8-26-15

Collection Date: 8/26/2015 8:40:00 AM

Lab ID: 1508D34-001

Matrix: AQUEOUS

Received Date: 8/27/2015 8:10:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015D: DIESEL RANGE							Analyst: JME
Diesel Range Organics (DRO)	1.7	0.20		mg/L	1	8/28/2015 7:54:03 PM	21009
Motor Oil Range Organics (MRO)	ND	2.5		mg/L	1	8/28/2015 7:54:03 PM	21009
Surr: DNOP	123	84.6-165		%REC	1	8/28/2015 7:54:03 PM	21009
EPA METHOD 8015D: GASOLINE RANGE							Analyst: DJF
Gasoline Range Organics (GRO)	0.51	0.050		mg/L	1	8/27/2015 7:12:19 PM	C28514
Surr: BFB	104	70-130		%REC	1	8/27/2015 7:12:19 PM	C28514
EPA METHOD 8260: VOLATILES SHORT LIST							Analyst: DJF
Benzene	1.2	1.0		µg/L	1	8/27/2015 7:12:19 PM	B28514
Toluene	ND	1.0		µg/L	1	8/27/2015 7:12:19 PM	B28514
Ethylbenzene	ND	1.0		µg/L	1	8/27/2015 7:12:19 PM	B28514
Methyl tert-butyl ether (MTBE)	ND	1.0		µg/L	1	8/27/2015 7:12:19 PM	B28514
Xylenes, Total	ND	1.5		µg/L	1	8/27/2015 7:12:19 PM	B28514
Surr: 1,2-Dichloroethane-d4	94.4	70-130		%REC	1	8/27/2015 7:12:19 PM	B28514
Surr: 4-Bromofluorobenzene	101	70-130		%REC	1	8/27/2015 7:12:19 PM	B28514
Surr: Dibromofluoromethane	106	70-130		%REC	1	8/27/2015 7:12:19 PM	B28514
Surr: Toluene-d8	102	70-130		%REC	1	8/27/2015 7:12:19 PM	B28514

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1508D34

Date Reported: 9/9/2015

CLIENT: Western Refining Southwest, Inc.

Client Sample ID: CW 25+95

Project: Collection Wells 8-26-15

Collection Date: 8/26/2015 7:05:00 AM

Lab ID: 1508D34-002

Matrix: AQUEOUS

Received Date: 8/27/2015 8:10:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015D: DIESEL RANGE							Analyst: JME
Diesel Range Organics (DRO)	1.3	0.20		mg/L	1	8/28/2015 8:15:31 PM	21009
Motor Oil Range Organics (MRO)	3.1	2.5		mg/L	1	8/28/2015 8:15:31 PM	21009
Surr: DNOP	122	84.6-165		%REC	1	8/28/2015 8:15:31 PM	21009
EPA METHOD 8015D: GASOLINE RANGE							Analyst: DJF
Gasoline Range Organics (GRO)	1.7	0.25		mg/L	5	8/27/2015 7:39:52 PM	C28514
Surr: BFB	100	70-130		%REC	5	8/27/2015 7:39:52 PM	C28514
EPA METHOD 8260: VOLATILES SHORT LIST							Analyst: DJF
Benzene	110	5.0		µg/L	5	8/27/2015 7:39:52 PM	B28514
Toluene	ND	5.0		µg/L	5	8/27/2015 7:39:52 PM	B28514
Ethylbenzene	ND	5.0		µg/L	5	8/27/2015 7:39:52 PM	B28514
Methyl tert-butyl ether (MTBE)	ND	5.0		µg/L	5	8/27/2015 7:39:52 PM	B28514
Xylenes, Total	ND	7.5		µg/L	5	8/27/2015 7:39:52 PM	B28514
Surr: 1,2-Dichloroethane-d4	97.2	70-130		%REC	5	8/27/2015 7:39:52 PM	B28514
Surr: 4-Bromofluorobenzene	103	70-130		%REC	5	8/27/2015 7:39:52 PM	B28514
Surr: Dibromofluoromethane	114	70-130		%REC	5	8/27/2015 7:39:52 PM	B28514
Surr: Toluene-d8	96.1	70-130		%REC	5	8/27/2015 7:39:52 PM	B28514

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1508D34

Date Reported: 9/9/2015

CLIENT: Western Refining Southwest, Inc.

Client Sample ID: CW 25+95D

Project: Collection Wells 8-26-15

Collection Date: 8/26/2015 7:05:00 AM

Lab ID: 1508D34-003

Matrix: AQUEOUS

Received Date: 8/27/2015 8:10:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015D: DIESEL RANGE							Analyst: JME
Diesel Range Organics (DRO)	0.66	0.20		mg/L	1	8/28/2015 9:20:35 PM	21009
Motor Oil Range Organics (MRO)	ND	2.5		mg/L	1	8/28/2015 9:20:35 PM	21009
Surr: DNOP	115	84.6-165		%REC	1	8/28/2015 9:20:35 PM	21009
EPA METHOD 8015D: GASOLINE RANGE							Analyst: DJF
Gasoline Range Organics (GRO)	1.6	0.25		mg/L	5	8/27/2015 8:07:23 PM	C28514
Surr: BFB	98.3	70-130		%REC	5	8/27/2015 8:07:23 PM	C28514
EPA METHOD 8260: VOLATILES SHORT LIST							Analyst: DJF
Benzene	110	5.0		µg/L	5	8/27/2015 8:07:23 PM	B28514
Toluene	ND	5.0		µg/L	5	8/27/2015 8:07:23 PM	B28514
Ethylbenzene	ND	5.0		µg/L	5	8/27/2015 8:07:23 PM	B28514
Methyl tert-butyl ether (MTBE)	ND	5.0		µg/L	5	8/27/2015 8:07:23 PM	B28514
Xylenes, Total	ND	7.5		µg/L	5	8/27/2015 8:07:23 PM	B28514
Surr: 1,2-Dichloroethane-d4	93.9	70-130		%REC	5	8/27/2015 8:07:23 PM	B28514
Surr: 4-Bromofluorobenzene	106	70-130		%REC	5	8/27/2015 8:07:23 PM	B28514
Surr: Dibromofluoromethane	108	70-130		%REC	5	8/27/2015 8:07:23 PM	B28514
Surr: Toluene-d8	99.6	70-130		%REC	5	8/27/2015 8:07:23 PM	B28514

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1508D34

Date Reported: 9/9/2015

CLIENT: Western Refining Southwest, Inc.

Client Sample ID: Trip Blank

Project: Collection Wells 8-26-15

Collection Date:

Lab ID: 1508D34-004

Matrix: TRIP BLANK

Received Date: 8/27/2015 8:10:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260: VOLATILES SHORT LIST						Analyst: DJF	
Benzene	ND	1.0		µg/L	1	8/27/2015 8:34:53 PM	B28514
Toluene	ND	1.0		µg/L	1	8/27/2015 8:34:53 PM	B28514
Ethylbenzene	ND	1.0		µg/L	1	8/27/2015 8:34:53 PM	B28514
Methyl tert-butyl ether (MTBE)	ND	1.0		µg/L	1	8/27/2015 8:34:53 PM	B28514
Xylenes, Total	ND	1.5		µg/L	1	8/27/2015 8:34:53 PM	B28514
Surr: 1,2-Dichloroethane-d4	93.2	70-130		%REC	1	8/27/2015 8:34:53 PM	B28514
Surr: 4-Bromofluorobenzene	106	70-130		%REC	1	8/27/2015 8:34:53 PM	B28514
Surr: Dibromofluoromethane	104	70-130		%REC	1	8/27/2015 8:34:53 PM	B28514
Surr: Toluene-d8	98.1	70-130		%REC	1	8/27/2015 8:34:53 PM	B28514

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank	Page 4 of 7
	D	Sample Diluted Due to Matrix	E	Value above quantitation range	
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits	
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range	
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit	
	S	% Recovery outside of range due to dilution or matrix			

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1508D34

09-Sep-15

Client: Western Refining Southwest, Inc.

Project: Collection Wells 8-26-15

Sample ID	MB-21009		SampType: MBLK		TestCode: EPA Method 8015D: Diesel Range					
Client ID:	PBW		Batch ID: 21009		RunNo: 28513					
Prep Date:	8/27/2015		Analysis Date: 8/28/2015		SeqNo: 863355		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	0.20								
Motor Oil Range Organics (MRO)	ND	2.5								
Surr: DNOP	0.62		0.5000		124	84.6	165			

Sample ID	LCS-21009		SampType: LCS		TestCode: EPA Method 8015D: Diesel Range					
Client ID:	LCSW		Batch ID: 21009		RunNo: 28513					
Prep Date:	8/27/2015		Analysis Date: 8/28/2015		SeqNo: 863356		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	2.8	0.20	2.500	0	113	67.3	174			
Surr: DNOP	0.33		0.2500		130	84.6	165			

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1508D34

09-Sep-15

Client: Western Refining Southwest, Inc.

Project: Collection Wells 8-26-15

Sample ID	rb2	SampType: MBLK			TestCode: EPA Method 8260: Volatiles Short List					
Client ID:	PBW	Batch ID: B28514			RunNo: 28514					
Prep Date:		Analysis Date: 8/28/2015			SeqNo: 862261		Units: µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	1.0								
Toluene	ND	1.0								
Ethylbenzene	ND	1.0								
Methyl tert-butyl ether (MTBE)	ND	1.0								
Xylenes, Total	ND	1.5								
Surr: 1,2-Dichloroethane-d4	9.4		10.00		94.0	70	130			
Surr: 4-Bromofluorobenzene	10		10.00		104	70	130			
Surr: Dibromofluoromethane	11		10.00		110	70	130			
Surr: Toluene-d8	9.8		10.00		98.0	70	130			

Sample ID	100ng lcs2		SampType: LCS		TestCode: EPA Method 8260: Volatiles Short List					
Client ID:	LCSW		Batch ID: B28514		RunNo: 28514					
Prep Date:			Analysis Date: 8/28/2015		SeqNo: 862262		Units: µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	21	1.0	20.00	0	107	70	130			
Toluene	20	1.0	20.00	0	99.8	70	130			
Surr: 1,2-Dichloroethane-d4	9.7		10.00		97.2	70	130			
Surr: 4-Bromofluorobenzene	10		10.00		101	70	130			
Surr: Dibromofluoromethane	11		10.00		108	70	130			
Surr: Toluene-d8	9.4		10.00		93.5	70	130			

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1508D34

09-Sep-15

Client: Western Refining Southwest, Inc.

Project: Collection Wells 8-26-15

Sample ID	rb	SampType:	MBLK	TestCode:	EPA Method 8015D: Gasoline Range					
Client ID:	PBW	Batch ID:	C28514	RunNo:	28514					
Prep Date:		Analysis Date:	8/27/2015	SeqNo:	862351	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	0.050								
Surr: BFB	9.6		10.00		96.4	70	130			

Sample ID	2.5ug gro lcs	SampType:	LCS	TestCode:	EPA Method 8015D: Gasoline Range					
Client ID:	LCSW	Batch ID:	C28514	RunNo:	28514					
Prep Date:		Analysis Date:	8/27/2015	SeqNo:	862363	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	0.44	0.050	0.5000	0	88.0	80.6	122			
Surr: BFB	9.9		10.00		99.1	70	130			

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit

Sample Log-In Check List

Client Name: **Western Refining Southw**

Work Order Number: **1508D34**

RcptNo: **1**

Received by/date:

[Signature] 08/22/15

Logged By: **Lindsay Mangin**

8/27/2015 8:10:00 AM

[Signature]

Completed By: **Lindsay Mangin**

8/27/2015 10:39:17 AM

[Signature]

Reviewed By:

[Signature]

08/27/15

Chain of Custody

1. Custody seals intact on sample bottles? Yes ☐ No ☐ Not Present ☒
2. Is Chain of Custody complete? Yes ☒ No ☐ Not Present ☐
3. How was the sample delivered? Courier

Log In

4. Was an attempt made to cool the samples? Yes ☒ No ☐ NA ☐
5. Were all samples received at a temperature of $>0^{\circ}\text{C}$ to 6.0°C ? Yes ☒ No ☐ NA ☐
6. Sample(s) in proper container(s)? Yes ☒ No ☐
7. Sufficient sample volume for indicated test(s)? Yes ☒ No ☐
8. Are samples (except VOA and ONG) properly preserved? Yes ☒ No ☐
9. Was preservative added to bottles? Yes ☐ No ☒ NA ☐
10. VOA vials have zero headspace? Yes ☒ No ☐ No VOA Vials ☐
11. Were any sample containers received broken? Yes ☐ No ☒
12. Does paperwork match bottle labels?
(Note discrepancies on chain of custody) Yes ☒ No ☐
13. Are matrices correctly identified on Chain of Custody? Yes ☒ No ☐
14. Is it clear what analyses were requested? Yes ☒ No ☐
15. Were all holding times able to be met?
(If no, notify customer for authorization.) Yes ☒ No ☐

of preserved
bottles checked
for pH:
(<2 or >12 unless noted)
Adjusted?
Checked by:

Special Handling (if applicable)

16. Was client notified of all discrepancies with this order? Yes ☐ No ☐ NA ☒

Person Notified:

Date:

By Whom:

Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding:

Client Instructions:

17. Additional remarks:

18. Cooler Information

Cooler No	Temp $^{\circ}\text{C}$	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	1.4	Good	Yes			



Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

September 09, 2015

Kelly Robinson

Western Refining Southwest, Inc.

#50 CR 4990

Bloomfield, NM 87413

TEL: (505) 632-4166

FAX (505) 632-3911

RE: North Boundary Barrier 8-26-15

OrderNo.: 1508D33

Dear Kelly Robinson:

Hall Environmental Analysis Laboratory received 3 sample(s) on 8/27/2015 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to www.hallenvironmental.com or the state specific web sites. In order to properly interpret your results it is imperative that you review this report in its entirety. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. When necessary, data qualifiers are provided on both the sample analysis report and the QC summary report, both sections should be reviewed. All samples are reported, as received, unless otherwise indicated. Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH and residual chlorine are qualified as being analyzed outside of the recommended holding time.

Please don't hesitate to contact HEAL for any additional information or clarifications.

ADHS Cert #AZ0682 -- NMED-DWB Cert #NM9425 -- NMED-Micro Cert #NM0190

Sincerely,

A handwritten signature in black ink, appearing to read "Andy Freeman", with a stylized flourish at the end.

Andy Freeman

Laboratory Manager

4901 Hawkins NE

Albuquerque, NM 87109

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1508D33

Date Reported: 9/9/2015

CLIENT: Western Refining Southwest, Inc.

Client Sample ID: OW 0+60

Project: North Boundary Barrier 8-26-15

Collection Date: 8/26/2015 9:00:00 AM

Lab ID: 1508D33-001

Matrix: AQUEOUS

Received Date: 8/27/2015 8:10:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015D: DIESEL RANGE							Analyst: JME
Diesel Range Organics (DRO)	1.7	0.20		mg/L	1	8/28/2015 6:28:00 PM	21009
Motor Oil Range Organics (MRO)	ND	2.5		mg/L	1	8/28/2015 6:28:00 PM	21009
Surr: DNOP	115	84.6-165		%REC	1	8/28/2015 6:28:00 PM	21009
EPA METHOD 8015D: GASOLINE RANGE							Analyst: DJF
Gasoline Range Organics (GRO)	0.38	0.050		mg/L	1	8/27/2015 5:49:42 PM	C28514
Surr: BFB	104	70-130		%REC	1	8/27/2015 5:49:42 PM	C28514
EPA METHOD 8260: VOLATILES SHORT LIST							Analyst: DJF
Benzene	ND	1.0		µg/L	1	8/27/2015 5:49:42 PM	B28514
Toluene	ND	1.0		µg/L	1	8/27/2015 5:49:42 PM	B28514
Ethylbenzene	ND	1.0		µg/L	1	8/27/2015 5:49:42 PM	B28514
Methyl tert-butyl ether (MTBE)	ND	1.0		µg/L	1	8/27/2015 5:49:42 PM	B28514
Xylenes, Total	ND	1.5		µg/L	1	8/27/2015 5:49:42 PM	B28514
Surr: 1,2-Dichloroethane-d4	95.3	70-130		%REC	1	8/27/2015 5:49:42 PM	B28514
Surr: 4-Bromofluorobenzene	94.6	70-130		%REC	1	8/27/2015 5:49:42 PM	B28514
Surr: Dibromofluoromethane	110	70-130		%REC	1	8/27/2015 5:49:42 PM	B28514
Surr: Toluene-d8	95.3	70-130		%REC	1	8/27/2015 5:49:42 PM	B28514

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1508D33

Date Reported: 9/9/2015

CLIENT: Western Refining Southwest, Inc.

Client Sample ID: OW 11+15

Project: North Boundary Barrier 8-26-15

Collection Date: 8/26/2015 8:10:00 AM

Lab ID: 1508D33-002

Matrix: AQUEOUS

Received Date: 8/27/2015 8:10:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015D: DIESEL RANGE							Analyst: JME
Diesel Range Organics (DRO)	54	2.0		mg/L	10	8/31/2015 10:45:01 AM	21009
Motor Oil Range Organics (MRO)	ND	25		mg/L	10	8/31/2015 10:45:01 AM	21009
Surr: DNOP	0	84.6-165	S	%REC	10	8/31/2015 10:45:01 AM	21009
EPA METHOD 8015D: GASOLINE RANGE							Analyst: DJF
Gasoline Range Organics (GRO)	4.5	1.0		mg/L	20	8/27/2015 6:17:12 PM	C28514
Surr: BFB	96.4	70-130		%REC	20	8/27/2015 6:17:12 PM	C28514
EPA METHOD 8260: VOLATILES SHORT LIST							Analyst: DJF
Benzene	2500	100		µg/L	100	8/28/2015 11:19:00 AM	A28542
Toluene	ND	20		µg/L	20	8/27/2015 6:17:12 PM	B28514
Ethylbenzene	ND	20		µg/L	20	8/27/2015 6:17:12 PM	B28514
Methyl tert-butyl ether (MTBE)	480	20		µg/L	20	8/27/2015 6:17:12 PM	B28514
Xylenes, Total	ND	30		µg/L	20	8/27/2015 6:17:12 PM	B28514
Surr: 1,2-Dichloroethane-d4	94.5	70-130		%REC	20	8/27/2015 6:17:12 PM	B28514
Surr: 4-Bromofluorobenzene	101	70-130		%REC	20	8/27/2015 6:17:12 PM	B28514
Surr: Dibromofluoromethane	108	70-130		%REC	20	8/27/2015 6:17:12 PM	B28514
Surr: Toluene-d8	94.6	70-130		%REC	20	8/27/2015 6:17:12 PM	B28514

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1508D33

Date Reported: 9/9/2015

CLIENT: Western Refining Southwest, Inc.

Client Sample ID: OW 3+85

Project: North Boundary Barrier 8-26-15

Collection Date: 8/26/2015 8:30:00 AM

Lab ID: 1508D33-003

Matrix: AQUEOUS

Received Date: 8/27/2015 8:10:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015D: DIESEL RANGE							Analyst: JME
Diesel Range Organics (DRO)	12	0.20		mg/L	1	8/28/2015 7:11:04 PM	21009
Motor Oil Range Organics (MRO)	ND	2.5		mg/L	1	8/28/2015 7:11:04 PM	21009
Surr: DNOP	122	84.6-165		%REC	1	8/28/2015 7:11:04 PM	21009
EPA METHOD 8015D: GASOLINE RANGE							Analyst: DJF
Gasoline Range Organics (GRO)	4.7	0.50		mg/L	10	8/27/2015 6:44:45 PM	C28514
Surr: BFB	102	70-130		%REC	10	8/27/2015 6:44:45 PM	C28514
EPA METHOD 8260: VOLATILES SHORT LIST							Analyst: DJF
Benzene	ND	10		µg/L	10	8/27/2015 6:44:45 PM	B28514
Toluene	ND	10		µg/L	10	8/27/2015 6:44:45 PM	B28514
Ethylbenzene	ND	10		µg/L	10	8/27/2015 6:44:45 PM	B28514
Methyl tert-butyl ether (MTBE)	ND	10		µg/L	10	8/27/2015 6:44:45 PM	B28514
Xylenes, Total	ND	15		µg/L	10	8/27/2015 6:44:45 PM	B28514
Surr: 1,2-Dichloroethane-d4	97.5	70-130		%REC	10	8/27/2015 6:44:45 PM	B28514
Surr: 4-Bromofluorobenzene	101	70-130		%REC	10	8/27/2015 6:44:45 PM	B28514
Surr: Dibromofluoromethane	104	70-130		%REC	10	8/27/2015 6:44:45 PM	B28514
Surr: Toluene-d8	95.8	70-130		%REC	10	8/27/2015 6:44:45 PM	B28514

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1508D33

09-Sep-15

Client: Western Refining Southwest, Inc.

Project: North Boundary Barrier 8-26-15

Sample ID	MB-21009		SampType:	MBLK		TestCode:	EPA Method 8015D: Diesel Range				
Client ID:	PBW		Batch ID:	21009		RunNo:	28513				
Prep Date:	8/27/2015		Analysis Date:	8/28/2015		SeqNo:	863355		Units: mg/L		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Diesel Range Organics (DRO)	ND	0.20									
Motor Oil Range Organics (MRO)	ND	2.5									
Surr: DNOP	0.62		0.5000		124	84.6	165				

Sample ID	LCS-21009		SampType: LCS		TestCode: EPA Method 8015D: Diesel Range					
Client ID:	LCSW		Batch ID: 21009		RunNo: 28513					
Prep Date:	8/27/2015		Analysis Date: 8/28/2015		SeqNo: 863356		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	2.8	0.20	2.500	0	113	67.3	174			
Surr: DNOP	0.33		0.2500		130	84.6	165			

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1508D33

09-Sep-15

Client: Western Refining Southwest, Inc.

Project: North Boundary Barrier 8-26-15

Sample ID	rb2	SampType: MBLK			TestCode: EPA Method 8260: Volatiles Short List					
Client ID:	PBW	Batch ID: B28514			RunNo: 28514					
Prep Date:		Analysis Date: 8/28/2015			SeqNo: 862261		Units: µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	1.0								
Toluene	ND	1.0								
Ethylbenzene	ND	1.0								
Methyl tert-butyl ether (MTBE)	ND	1.0								
Xylenes, Total	ND	1.5								
Surr: 1,2-Dichloroethane-d4	9.4		10.00		94.0	70	130			
Surr: 4-Bromofluorobenzene	10		10.00		104	70	130			
Surr: Dibromofluoromethane	11		10.00		110	70	130			
Surr: Toluene-d8	9.8		10.00		98.0	70	130			

Sample ID	100ng lcs2	SampType: LCS			TestCode: EPA Method 8260: Volatiles Short List					
Client ID:	LCSW	Batch ID: B28514			RunNo: 28514					
Prep Date:		Analysis Date: 8/28/2015			SeqNo: 862262		Units: µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	21	1.0	20.00	0	107	70	130			
Toluene	20	1.0	20.00	0	99.8	70	130			
Surr: 1,2-Dichloroethane-d4	9.7		10.00		97.2	70	130			
Surr: 4-Bromofluorobenzene	10		10.00		101	70	130			
Surr: Dibromofluoromethane	11		10.00		108	70	130			
Surr: Toluene-d8	9.4		10.00		93.5	70	130			

Sample ID	RB	SampType: MBLK		TestCode: EPA Method 8260: Volatiles Short List						
Client ID:	PBW	Batch ID: A28542		RunNo: 28542						
Prep Date:		Analysis Date: 8/28/2015		SeqNo: 863398		Units: µg/L				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	1.0								
Surr: 1,2-Dichloroethane-d4	9.8		10.00		98.5	70	130			
Surr: 4-Bromofluorobenzene	9.4		10.00		94.0	70	130			
Surr: Dibromofluoromethane	12		10.00		116	70	130			
Surr: Toluene-d8	9.2		10.00		91.6	70	130			

Sample ID	100ng lcs		SampType: LCS		TestCode: EPA Method 8260: Volatiles Short List					
Client ID:	LCSW		Batch ID: A28542		RunNo: 28542					
Prep Date:			Analysis Date: 8/28/2015		SeqNo: 863399		Units: µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	21	1.0	20.00	0	104	70	130			
Surr: 1,2-Dichloroethane-d4	9.0		10.00		90.3	70	130			

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1508D33

09-Sep-15

Client: Western Refining Southwest, Inc.

Project: North Boundary Barrier 8-26-15

Sample ID	100ng lcs	SampType:	LCS	TestCode:	EPA Method 8260: Volatiles Short List					
Client ID:	LCSW	Batch ID:	A28542	RunNo:	28542					
Prep Date:		Analysis Date:	8/28/2015	SeqNo:	863399	Units:	µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 4-Bromofluorobenzene	10		10.00		102	70	130			
Surr: Dibromofluoromethane	11		10.00		108	70	130			
Surr: Toluene-d8	9.7		10.00		97.3	70	130			

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1508D33

09-Sep-15

Client: Western Refining Southwest, Inc.

Project: North Boundary Barrier 8-26-15

Sample ID	rb	SampType:	MBLK	TestCode:	EPA Method 8015D: Gasoline Range					
Client ID:	PBW	Batch ID:	C28514	RunNo:	28514					
Prep Date:		Analysis Date:	8/27/2015	SeqNo:	862351	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	0.050								
Surr: BFB	9.6		10.00		96.4	70	130			

Sample ID	2.5ug gro lcs	SampType:	LCS	TestCode:	EPA Method 8015D: Gasoline Range					
Client ID:	LCSW	Batch ID:	C28514	RunNo:	28514					
Prep Date:		Analysis Date:	8/27/2015	SeqNo:	862363	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	0.44	0.050	0.5000	0	88.0	80.6	122			
Surr: BFB	9.9		10.00		99.1	70	130			

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit

Sample Log-In Check List

Client Name: **Western Refining Southw**

Work Order Number: **1508D33**

RcptNo: **1**

Received by/date:

[Signature]

08/27/15

Logged By: **Lindsay Mangin**

8/27/2015 8:10:00 AM

[Signature]

Completed By: **Lindsay Mangin**

8/27/2015 10:33:27 AM

[Signature]

Reviewed By:

[Signature]

08/27/15

Chain of Custody

1. Custody seals intact on sample bottles? Yes ☐ No ☐ Not Present ☒
2. Is Chain of Custody complete? Yes ☒ No ☐ Not Present ☐
3. How was the sample delivered? Courier

Log In

4. Was an attempt made to cool the samples? Yes ☒ No ☐ NA ☐
5. Were all samples received at a temperature of >0° C to 6.0°C Yes ☒ No ☐ NA ☐
6. Sample(s) in proper container(s)? Yes ☒ No ☐
7. Sufficient sample volume for indicated test(s)? Yes ☒ No ☐
8. Are samples (except VOA and ONG) properly preserved? Yes ☒ No ☐
9. Was preservative added to bottles? Yes ☐ No ☒ NA ☐
10. VOA vials have zero headspace? Yes ☒ No ☐ No VOA Vials ☐
11. Were any sample containers received broken? Yes ☐ No ☒
12. Does paperwork match bottle labels?
(Note discrepancies on chain of custody) Yes ☒ No ☐
13. Are matrices correctly identified on Chain of Custody? Yes ☒ No ☐
14. Is it clear what analyses were requested? Yes ☒ No ☐
15. Were all holding times able to be met?
(If no, notify customer for authorization.) Yes ☒ No ☐

of preserved
bottles checked
for pH:
(<2 or >12 unless noted)
Adjusted?
Checked by:

Special Handling (if applicable)

16. Was client notified of all discrepancies with this order? Yes ☐ No ☐ NA ☒

Person Notified:

Date:

By Whom:

Via:

☐ eMail

☐ Phone

☐ Fax

☐ In Person

Regarding:

Client Instructions:

17. Additional remarks:

18. Cooler Information

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	1.4	Good	Yes			



Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

September 10, 2015

Kelly Robinson

Western Refining Southwest, Inc.

#50 CR 4990

Bloomfield, NM 87413

TEL: (505) 632-4166

FAX (505) 632-3911

RE: North Boundary Barrier 8-26-15

OrderNo.: 1508D35

Dear Kelly Robinson:

Hall Environmental Analysis Laboratory received 5 sample(s) on 8/27/2015 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to www.hallenvironmental.com or the state specific web sites. In order to properly interpret your results it is imperative that you review this report in its entirety. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. When necessary, data qualifiers are provided on both the sample analysis report and the QC summary report, both sections should be reviewed. All samples are reported, as received, unless otherwise indicated. Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH and residual chlorine are qualified as being analyzed outside of the recommended holding time.

Please don't hesitate to contact HEAL for any additional information or clarifications.

ADHS Cert #AZ0682 -- NMED-DWB Cert #NM9425 -- NMED-Micro Cert #NM0190

Sincerely,

A handwritten signature in black ink, appearing to read "Andy Freeman", with a stylized flourish at the end.

Andy Freeman

Laboratory Manager

4901 Hawkins NE

Albuquerque, NM 87109

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1508D35

Date Reported: 9/10/2015

CLIENT: Western Refining Southwest, Inc.

Client Sample ID: OW 16+60

Project: North Boundary Barrier 8-26-15

Collection Date: 8/26/2015 8:00:00 AM

Lab ID: 1508D35-001

Matrix: AQUEOUS

Received Date: 8/27/2015 8:10:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015D: DIESEL RANGE							Analyst: JME
Diesel Range Organics (DRO)	5.0	0.20		mg/L	1	8/28/2015 10:25:25 PM	21009
Motor Oil Range Organics (MRO)	ND	2.5		mg/L	1	8/28/2015 10:25:25 PM	21009
Surr: DNOP	124	84.6-165		%REC	1	8/28/2015 10:25:25 PM	21009
EPA METHOD 8015D: GASOLINE RANGE							Analyst: DJF
Gasoline Range Organics (GRO)	1.0	0.050		mg/L	1	8/27/2015 9:29:59 PM	C28514
Surr: BFB	107	70-130		%REC	1	8/27/2015 9:29:59 PM	C28514
EPA METHOD 8260: VOLATILES SHORT LIST							Analyst: DJF
Benzene	ND	1.0		µg/L	1	8/27/2015 9:29:59 PM	B28514
Toluene	ND	1.0		µg/L	1	8/27/2015 9:29:59 PM	B28514
Ethylbenzene	1.7	1.0		µg/L	1	8/27/2015 9:29:59 PM	B28514
Methyl tert-butyl ether (MTBE)	410	10		µg/L	10	8/27/2015 9:02:25 PM	B28514
Xylenes, Total	ND	1.5		µg/L	1	8/27/2015 9:29:59 PM	B28514
Surr: 1,2-Dichloroethane-d4	105	70-130		%REC	1	8/27/2015 9:29:59 PM	B28514
Surr: 4-Bromofluorobenzene	96.1	70-130		%REC	1	8/27/2015 9:29:59 PM	B28514
Surr: Dibromofluoromethane	110	70-130		%REC	1	8/27/2015 9:29:59 PM	B28514
Surr: Toluene-d8	101	70-130		%REC	1	8/27/2015 9:29:59 PM	B28514

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1508D35

Date Reported: 9/10/2015

CLIENT: Western Refining Southwest, Inc.

Client Sample ID: OW 22+00

Project: North Boundary Barrier 8-26-15

Collection Date: 8/26/2015 7:50:00 AM

Lab ID: 1508D35-002

Matrix: AQUEOUS

Received Date: 8/27/2015 8:10:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015D: DIESEL RANGE							Analyst: JME
Diesel Range Organics (DRO)	ND	0.20		mg/L	1	8/28/2015 10:47:02 PM	21009
Motor Oil Range Organics (MRO)	ND	2.5		mg/L	1	8/28/2015 10:47:02 PM	21009
Surr: DNOP	115	84.6-165		%REC	1	8/28/2015 10:47:02 PM	21009
EPA METHOD 8015D: GASOLINE RANGE							Analyst: DJF
Gasoline Range Organics (GRO)	ND	0.050		mg/L	1	8/27/2015 9:57:29 PM	C28514
Surr: BFB	101	70-130		%REC	1	8/27/2015 9:57:29 PM	C28514
EPA METHOD 8260: VOLATILES SHORT LIST							Analyst: DJF
Benzene	ND	1.0		µg/L	1	8/27/2015 9:57:29 PM	B28514
Toluene	ND	1.0		µg/L	1	8/27/2015 9:57:29 PM	B28514
Ethylbenzene	ND	1.0		µg/L	1	8/27/2015 9:57:29 PM	B28514
Methyl tert-butyl ether (MTBE)	ND	1.0		µg/L	1	8/27/2015 9:57:29 PM	B28514
Xylenes, Total	ND	1.5		µg/L	1	8/27/2015 9:57:29 PM	B28514
Surr: 1,2-Dichloroethane-d4	97.4	70-130		%REC	1	8/27/2015 9:57:29 PM	B28514
Surr: 4-Bromofluorobenzene	100	70-130		%REC	1	8/27/2015 9:57:29 PM	B28514
Surr: Dibromofluoromethane	109	70-130		%REC	1	8/27/2015 9:57:29 PM	B28514
Surr: Toluene-d8	95.8	70-130		%REC	1	8/27/2015 9:57:29 PM	B28514

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1508D35

Date Reported: 9/10/2015

CLIENT: Western Refining Southwest, Inc.

Client Sample ID: OW 23+10

Project: North Boundary Barrier 8-26-15

Collection Date: 8/26/2015 7:40:00 AM

Lab ID: 1508D35-003

Matrix: AQUEOUS

Received Date: 8/27/2015 8:10:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015D: DIESEL RANGE							Analyst: JME
Diesel Range Organics (DRO)	0.52	0.20		mg/L	1	8/28/2015 11:08:37 PM	21009
Motor Oil Range Organics (MRO)	ND	2.5		mg/L	1	8/28/2015 11:08:37 PM	21009
Surr: DNOP	130	84.6-165		%REC	1	8/28/2015 11:08:37 PM	21009
EPA METHOD 8015D: GASOLINE RANGE							Analyst: DJF
Gasoline Range Organics (GRO)	ND	0.050		mg/L	1	8/28/2015 1:09:24 AM	C28514
Surr: BFB	93.8	70-130		%REC	1	8/28/2015 1:09:24 AM	C28514
EPA METHOD 8260: VOLATILES SHORT LIST							Analyst: DJF
Benzene	ND	1.0		µg/L	1	8/28/2015 1:09:24 AM	B28514
Toluene	ND	1.0		µg/L	1	8/28/2015 1:09:24 AM	B28514
Ethylbenzene	ND	1.0		µg/L	1	8/28/2015 1:09:24 AM	B28514
Methyl tert-butyl ether (MTBE)	ND	1.0		µg/L	1	8/28/2015 1:09:24 AM	B28514
Xylenes, Total	ND	1.5		µg/L	1	8/28/2015 1:09:24 AM	B28514
Surr: 1,2-Dichloroethane-d4	95.3	70-130		%REC	1	8/28/2015 1:09:24 AM	B28514
Surr: 4-Bromofluorobenzene	98.9	70-130		%REC	1	8/28/2015 1:09:24 AM	B28514
Surr: Dibromofluoromethane	105	70-130		%REC	1	8/28/2015 1:09:24 AM	B28514
Surr: Toluene-d8	95.1	70-130		%REC	1	8/28/2015 1:09:24 AM	B28514

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1508D35

Date Reported: 9/10/2015

CLIENT: Western Refining Southwest, Inc.

Client Sample ID: OW 23+90

Project: North Boundary Barrier 8-26-15

Collection Date: 8/26/2015 7:30:00 AM

Lab ID: 1508D35-004

Matrix: AQUEOUS

Received Date: 8/27/2015 8:10:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015D: DIESEL RANGE							Analyst: JME
Diesel Range Organics (DRO)	ND	0.20		mg/L	1	8/28/2015 11:30:17 PM	21009
Motor Oil Range Organics (MRO)	ND	2.5		mg/L	1	8/28/2015 11:30:17 PM	21009
Surr: DNOP	131	84.6-165		%REC	1	8/28/2015 11:30:17 PM	21009
EPA METHOD 8015D: GASOLINE RANGE							Analyst: DJF
Gasoline Range Organics (GRO)	ND	0.050		mg/L	1	8/28/2015 1:36:54 AM	C28514
Surr: BFB	98.9	70-130		%REC	1	8/28/2015 1:36:54 AM	C28514
EPA METHOD 8260: VOLATILES SHORT LIST							Analyst: DJF
Benzene	ND	1.0		µg/L	1	8/28/2015 1:36:54 AM	B28514
Toluene	ND	1.0		µg/L	1	8/28/2015 1:36:54 AM	B28514
Ethylbenzene	ND	1.0		µg/L	1	8/28/2015 1:36:54 AM	B28514
Methyl tert-butyl ether (MTBE)	ND	1.0		µg/L	1	8/28/2015 1:36:54 AM	B28514
Xylenes, Total	ND	1.5		µg/L	1	8/28/2015 1:36:54 AM	B28514
Surr: 1,2-Dichloroethane-d4	94.1	70-130		%REC	1	8/28/2015 1:36:54 AM	B28514
Surr: 4-Bromofluorobenzene	106	70-130		%REC	1	8/28/2015 1:36:54 AM	B28514
Surr: Dibromofluoromethane	103	70-130		%REC	1	8/28/2015 1:36:54 AM	B28514
Surr: Toluene-d8	97.0	70-130		%REC	1	8/28/2015 1:36:54 AM	B28514

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank	Page 4 of 9
	D	Sample Diluted Due to Matrix	E	Value above quantitation range	
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits	
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range	
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit	
	S	% Recovery outside of range due to dilution or matrix			

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1508D35

Date Reported: 9/10/2015

CLIENT: Western Refining Southwest, Inc.

Client Sample ID: OW 25+70

Project: North Boundary Barrier 8-26-15

Collection Date: 8/26/2015 7:20:00 AM

Lab ID: 1508D35-005

Matrix: AQUEOUS

Received Date: 8/27/2015 8:10:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015D: DIESEL RANGE							Analyst: JME
Diesel Range Organics (DRO)	ND	0.20		mg/L	1	8/28/2015 11:51:50 PM	21009
Motor Oil Range Organics (MRO)	ND	2.5		mg/L	1	8/28/2015 11:51:50 PM	21009
Surr: DNOP	125	84.6-165		%REC	1	8/28/2015 11:51:50 PM	21009
EPA METHOD 8015D: GASOLINE RANGE							Analyst: DJF
Gasoline Range Organics (GRO)	ND	0.050		mg/L	1	8/28/2015 2:04:24 AM	C28514
Surr: BFB	97.4	70-130		%REC	1	8/28/2015 2:04:24 AM	C28514
EPA METHOD 8260: VOLATILES SHORT LIST							Analyst: DJF
Benzene	ND	1.0		µg/L	1	8/28/2015 2:04:24 AM	B28514
Toluene	ND	1.0		µg/L	1	8/28/2015 2:04:24 AM	B28514
Ethylbenzene	ND	1.0		µg/L	1	8/28/2015 2:04:24 AM	B28514
Methyl tert-butyl ether (MTBE)	ND	1.0		µg/L	1	8/28/2015 2:04:24 AM	B28514
Xylenes, Total	ND	1.5		µg/L	1	8/28/2015 2:04:24 AM	B28514
Surr: 1,2-Dichloroethane-d4	97.0	70-130		%REC	1	8/28/2015 2:04:24 AM	B28514
Surr: 4-Bromofluorobenzene	105	70-130		%REC	1	8/28/2015 2:04:24 AM	B28514
Surr: Dibromofluoromethane	105	70-130		%REC	1	8/28/2015 2:04:24 AM	B28514
Surr: Toluene-d8	96.5	70-130		%REC	1	8/28/2015 2:04:24 AM	B28514

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank	Page 5 of 9
	D	Sample Diluted Due to Matrix	E	Value above quantitation range	
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits	
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range	
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit	
	S	% Recovery outside of range due to dilution or matrix			

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1508D35

10-Sep-15

Client: Western Refining Southwest, Inc.

Project: North Boundary Barrier 8-26-15

Sample ID	MB-21009		SampType: MBLK		TestCode: EPA Method 8015D: Diesel Range					
Client ID:	PBW		Batch ID: 21009		RunNo: 28513					
Prep Date:	8/27/2015		Analysis Date: 8/28/2015		SeqNo: 863355		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	0.20								
Motor Oil Range Organics (MRO)	ND	2.5								
Surr: DNOP	0.62		0.5000		124	84.6	165			

Sample ID	LCS-21009		SampType: LCS		TestCode: EPA Method 8015D: Diesel Range					
Client ID:	LCSW		Batch ID: 21009		RunNo: 28513					
Prep Date:	8/27/2015		Analysis Date: 8/28/2015		SeqNo: 863356		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	2.8	0.20	2.500	0	113	67.3	174			
Surr: DNOP	0.33		0.2500		130	84.6	165			

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1508D35

10-Sep-15

Client: Western Refining Southwest, Inc.

Project: North Boundary Barrier 8-26-15

Sample ID rb2	SampType: MBLK				TestCode: EPA Method 8260: Volatiles Short List					
Client ID: PBW	Batch ID: B28514				RunNo: 28514					
Prep Date:	Analysis Date: 8/28/2015				SeqNo: 862261		Units: µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	1.0								
Toluene	ND	1.0								
Ethylbenzene	ND	1.0								
Methyl tert-butyl ether (MTBE)	ND	1.0								
Xylenes, Total	ND	1.5								
Surr: 1,2-Dichloroethane-d4	9.4		10.00		94.0	70	130			
Surr: 4-Bromofluorobenzene	10		10.00		104	70	130			
Surr: Dibromofluoromethane	11		10.00		110	70	130			
Surr: Toluene-d8	9.8		10.00		98.0	70	130			

Sample ID 100ng lcs2	SampType: LCS				TestCode: EPA Method 8260: Volatiles Short List					
Client ID: LCSW	Batch ID: B28514				RunNo: 28514					
Prep Date:	Analysis Date: 8/28/2015				SeqNo: 862262		Units: µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	21	1.0	20.00	0	107	70	130			
Toluene	20	1.0	20.00	0	99.8	70	130			
Surr: 1,2-Dichloroethane-d4	9.7		10.00		97.2	70	130			
Surr: 4-Bromofluorobenzene	10		10.00		101	70	130			
Surr: Dibromofluoromethane	11		10.00		108	70	130			
Surr: Toluene-d8	9.4		10.00		93.5	70	130			

Sample ID 1508d35-005a ms2	SampType: MS				TestCode: EPA Method 8260: Volatiles Short List					
Client ID: OW 25+70	Batch ID: B28514				RunNo: 28514					
Prep Date:	Analysis Date: 8/28/2015				SeqNo: 862294		Units: µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	21	1.0	20.00	0	103	70	130			
Toluene	21	1.0	20.00	0	106	70	130			
Surr: 1,2-Dichloroethane-d4	9.3		10.00		93.5	70	130			
Surr: 4-Bromofluorobenzene	11		10.00		105	70	130			
Surr: Dibromofluoromethane	10		10.00		102	70	130			
Surr: Toluene-d8	9.7		10.00		97.0	70	130			

Sample ID 1508d35-005a msd2	SampType: MSD				TestCode: EPA Method 8260: Volatiles Short List					
Client ID: OW 25+70	Batch ID: B28514				RunNo: 28514					
Prep Date:	Analysis Date: 8/28/2015				SeqNo: 862314		Units: µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	20	1.0	20.00	0	102	70	130	0.948	20	

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1508D35

10-Sep-15

Client: Western Refining Southwest, Inc.

Project: North Boundary Barrier 8-26-15

Sample ID	1508d35-005a msd2	SampType:	MSD	TestCode:	EPA Method 8260: Volatiles Short List						
Client ID:	OW 25+70	Batch ID:	B28514	RunNo:	28514						
Prep Date:		Analysis Date:	8/28/2015	SeqNo:	862314	Units:	µg/L				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Toluene	20	1.0	20.00	0	99.4	70	130	6.27	20		
Surr: 1,2-Dichloroethane-d4	9.1		10.00		91.4	70	130	0	0		
Surr: 4-Bromofluorobenzene	10		10.00		104	70	130	0	0		
Surr: Dibromofluoromethane	10		10.00		105	70	130	0	0		
Surr: Toluene-d8	9.8		10.00		97.5	70	130	0	0		

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1508D35

10-Sep-15

Client: Western Refining Southwest, Inc.

Project: North Boundary Barrier 8-26-15

Sample ID	rb	SampType:	MBLK	TestCode:	EPA Method 8015D: Gasoline Range					
Client ID:	PBW	Batch ID:	C28514	RunNo:	28514					
Prep Date:		Analysis Date:	8/27/2015	SeqNo:	862351	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	0.050								
Surr: BFB	9.6		10.00		96.4	70	130			

Sample ID	2.5ug gro lcs	SampType:	LCS	TestCode:	EPA Method 8015D: Gasoline Range					
Client ID:	LCSW	Batch ID:	C28514	RunNo:	28514					
Prep Date:		Analysis Date:	8/27/2015	SeqNo:	862363	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	0.44	0.050	0.5000	0	88.0	80.6	122			
Surr: BFB	9.9		10.00		99.1	70	130			

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit

Sample Log-In Check List

Client Name: **Western Refining Southw**

Work Order Number: **1508D35**

RcptNo: **1**

Received by/date:

[Signature]

08/27/15

Logged By: **Lindsay Mangin**

8/27/2015 8:10:00 AM

[Signature]

Completed By: **Lindsay Mangin**

8/27/2015 10:43:51 AM

[Signature]

Reviewed By:

[Signature]

08/27/15

Chain of Custody

1. Custody seals intact on sample bottles? Yes ☐ No ☐ Not Present ☒
2. Is Chain of Custody complete? Yes ☒ No ☐ Not Present ☐
3. How was the sample delivered? Courier

Log In

4. Was an attempt made to cool the samples? Yes ☒ No ☐ NA ☐
5. Were all samples received at a temperature of $>0^{\circ}\text{C}$ to 6.0°C ? Yes ☒ No ☐ NA ☐
6. Sample(s) in proper container(s)? Yes ☒ No ☐
7. Sufficient sample volume for indicated test(s)? Yes ☒ No ☐
8. Are samples (except VOA and ONG) properly preserved? Yes ☒ No ☐
9. Was preservative added to bottles? Yes ☐ No ☒ NA ☐
10. VOA vials have zero headspace? Yes ☒ No ☐ No VOA Vials ☐
11. Were any sample containers received broken? Yes ☐ No ☒
12. Does paperwork match bottle labels?
(Note discrepancies on chain of custody) Yes ☒ No ☐
13. Are matrices correctly identified on Chain of Custody? Yes ☒ No ☐
14. Is it clear what analyses were requested? Yes ☒ No ☐
15. Were all holding times able to be met?
(If no, notify customer for authorization.) Yes ☒ No ☐

of preserved
bottles checked
for pH:

(<2 or >12 unless noted)

Adjusted?

Checked by:

Special Handling (if applicable)

16. Was client notified of all discrepancies with this order? Yes ☐ No ☐ NA ☒

Person Notified:

Date:

By Whom:

Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding:

Client Instructions:

17. Additional remarks:

18. Cooler Information

Cooler No	Temp $^{\circ}\text{C}$	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	1.4	Good	Yes			



Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

September 23, 2015

Kelly Robinson

Western Refining Southwest, Inc.

#50 CR 4990

Bloomfield, NM 87413

TEL: (505) 632-4166

FAX (505) 632-3911

RE: San Juan River Bluff 8-26-15

OrderNo.: 1508D27

Dear Kelly Robinson:

Hall Environmental Analysis Laboratory received 3 sample(s) on 8/27/2015 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to www.hallenvironmental.com or the state specific web sites. In order to properly interpret your results it is imperative that you review this report in its entirety. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. When necessary, data qualifiers are provided on both the sample analysis report and the QC summary report, both sections should be reviewed. All samples are reported, as received, unless otherwise indicated. Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH and residual chlorine are qualified as being analyzed outside of the recommended holding time.

Please don't hesitate to contact HEAL for any additional information or clarifications.

ADHS Cert #AZ0682 -- NMED-DWB Cert #NM9425 -- NMED-Micro Cert #NM0190

Sincerely,

A handwritten signature in black ink, appearing to read "Andy Freeman", with a stylized flourish at the end.

Andy Freeman

Laboratory Manager

4901 Hawkins NE

Albuquerque, NM 87109

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1508D27

Date Reported: 9/23/2015

CLIENT: Western Refining Southwest, Inc.

Client Sample ID: Outfall #2

Project: San Juan River Bluff 8-26-15

Collection Date: 8/26/2015 9:50:00 AM

Lab ID: 1508D27-001

Matrix: AQUEOUS

Received Date: 8/27/2015 8:10:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015D: DIESEL RANGE							Analyst: JME
Diesel Range Organics (DRO)	ND	0.20		mg/L	1	8/28/2015 4:18:51 PM	21009
Motor Oil Range Organics (MRO)	ND	2.5		mg/L	1	8/28/2015 4:18:51 PM	21009
Surr: DNOP	121	84.6-165		%REC	1	8/28/2015 4:18:51 PM	21009
EPA 200.8: DISSOLVED METALS							Analyst: DBD
Arsenic	0.0010	0.0010		mg/L	1	9/9/2015 8:47:56 PM	F28733
Lead	ND	0.00050		mg/L	1	9/9/2015 8:47:56 PM	F28733
Selenium	ND	0.0010		mg/L	1	9/9/2015 8:47:56 PM	F28733
Uranium	ND	0.00050		mg/L	1	9/9/2015 8:47:56 PM	F28733
CARBON DIOXIDE							Analyst: JRR
Total Carbon Dioxide	78	1.0	H	mg CO2/L	1	8/28/2015 3:31:56 PM	R28559
EPA METHOD 300.0: ANIONS							Analyst: LGT
Fluoride	0.17	0.10		mg/L	1	8/27/2015 4:49:26 PM	R28522
Chloride	2.7	0.50		mg/L	1	8/27/2015 4:49:26 PM	R28522
Nitrogen, Nitrite (As N)	ND	0.10		mg/L	1	8/27/2015 4:49:26 PM	R28522
Bromide	ND	0.10		mg/L	1	8/27/2015 4:49:26 PM	R28522
Nitrogen, Nitrate (As N)	0.54	0.10		mg/L	1	8/27/2015 4:49:26 PM	R28522
Phosphorus, Orthophosphate (As P)	ND	0.50		mg/L	1	8/27/2015 4:49:26 PM	R28522
Sulfate	42	0.50		mg/L	1	8/27/2015 4:49:26 PM	R28522
SM2320B: ALKALINITY							Analyst: JRR
Bicarbonate (As CaCO3)	85.24	20.00		mg/L CaCO3	1	8/28/2015 3:31:56 PM	R28559
Carbonate (As CaCO3)	ND	2.000		mg/L CaCO3	1	8/28/2015 3:31:56 PM	R28559
Total Alkalinity (as CaCO3)	85.24	20.00		mg/L CaCO3	1	8/28/2015 3:31:56 PM	R28559
EPA METHOD 200.7: DISSOLVED METALS							Analyst: ELS
Barium	0.060	0.0020		mg/L	1	9/8/2015 4:56:13 PM	A28693
Cadmium	ND	0.0020		mg/L	1	9/8/2015 4:56:13 PM	A28693
Calcium	30	1.0		mg/L	1	9/8/2015 4:56:13 PM	A28693
Chromium	ND	0.0060		mg/L	1	9/8/2015 4:56:13 PM	A28693
Copper	ND	0.0060		mg/L	1	9/8/2015 4:56:13 PM	A28693
Iron	ND	0.020		mg/L	1	9/8/2015 4:56:13 PM	A28693
Magnesium	5.2	1.0		mg/L	1	9/8/2015 4:56:13 PM	A28693
Manganese	0.0021	0.0020		mg/L	1	9/8/2015 4:56:13 PM	A28693
Potassium	1.7	1.0		mg/L	1	9/8/2015 4:56:13 PM	A28693
Silver	ND	0.0050		mg/L	1	9/8/2015 4:56:13 PM	A28693
Sodium	14	1.0		mg/L	1	9/8/2015 4:56:13 PM	A28693
Zinc	0.019	0.010		mg/L	1	9/8/2015 4:56:13 PM	A28693
EPA METHOD 200.7: METALS							Analyst: JLF

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1508D27

Date Reported: 9/23/2015

CLIENT: Western Refining Southwest, Inc.

Client Sample ID: Outfall #2

Project: San Juan River Bluff 8-26-15

Collection Date: 8/26/2015 9:50:00 AM

Lab ID: 1508D27-001

Matrix: AQUEOUS

Received Date: 8/27/2015 8:10:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 200.7: METALS							Analyst: JLF
Arsenic	ND	0.020		mg/L	1	9/18/2015 2:05:57 PM	21141
Barium	0.063	0.0020		mg/L	1	9/8/2015 5:36:13 PM	21141
Cadmium	ND	0.0020		mg/L	1	9/8/2015 5:36:13 PM	21141
Chromium	ND	0.0060		mg/L	1	9/8/2015 5:36:13 PM	21141
Lead	ND	0.0050		mg/L	1	9/18/2015 2:05:57 PM	21141
Selenium	ND	0.050		mg/L	1	9/14/2015 6:22:48 PM	21141
Silver	ND	0.0050		mg/L	1	9/8/2015 5:36:13 PM	21141
EPA METHOD 245.1: MERCURY							Analyst: MED
Mercury	ND	0.00020		mg/L	1	9/8/2015 3:51:25 PM	21167
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	ND	0.050		mg/L	1	8/27/2015 11:59:19 PM	R28503
Surr: BFB	81.0	57.8-137		%REC	1	8/27/2015 11:59:19 PM	R28503
EPA METHOD 8260: VOLATILES SHORT LIST							Analyst: RAA
Benzene	ND	1.0		µg/L	1	8/28/2015 4:39:16 PM	A28552
Toluene	ND	1.0		µg/L	1	8/28/2015 4:39:16 PM	A28552
Ethylbenzene	ND	1.0		µg/L	1	8/28/2015 4:39:16 PM	A28552
Methyl tert-butyl ether (MTBE)	ND	1.0		µg/L	1	8/28/2015 4:39:16 PM	A28552
Xylenes, Total	ND	1.5		µg/L	1	8/28/2015 4:39:16 PM	A28552
Surr: 1,2-Dichloroethane-d4	97.1	70-130		%REC	1	8/28/2015 4:39:16 PM	A28552
Surr: 4-Bromofluorobenzene	106	70-130		%REC	1	8/28/2015 4:39:16 PM	A28552
Surr: Dibromofluoromethane	93.0	70-130		%REC	1	8/28/2015 4:39:16 PM	A28552
Surr: Toluene-d8	100	70-130		%REC	1	8/28/2015 4:39:16 PM	A28552

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1508D27

Date Reported: 9/23/2015

CLIENT: Western Refining Southwest, Inc.

Client Sample ID: Outfall #3

Project: San Juan River Bluff 8-26-15

Collection Date: 8/26/2015 10:00:00 AM

Lab ID: 1508D27-002

Matrix: AQUEOUS

Received Date: 8/27/2015 8:10:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015D: DIESEL RANGE							Analyst: JME
Diesel Range Organics (DRO)	ND	0.20		mg/L	1	8/28/2015 5:23:20 PM	21009
Motor Oil Range Organics (MRO)	ND	2.5		mg/L	1	8/28/2015 5:23:20 PM	21009
Surr: DNOP	129	84.6-165		%REC	1	8/28/2015 5:23:20 PM	21009
EPA 200.8: DISSOLVED METALS							Analyst: DBD
Arsenic	0.0010	0.0010		mg/L	1	9/9/2015 8:54:05 PM	F28733
Lead	ND	0.00050		mg/L	1	9/9/2015 8:54:05 PM	F28733
Selenium	ND	0.0010		mg/L	1	9/9/2015 8:54:05 PM	F28733
Uranium	0.00066	0.00050		mg/L	1	9/9/2015 8:54:05 PM	F28733
CARBON DIOXIDE							Analyst: JRR
Total Carbon Dioxide	85	1.0	H	mg CO2/L	1	8/28/2015 3:40:22 PM	R28559
EPA METHOD 300.0: ANIONS							Analyst: LGT
Fluoride	0.18	0.10		mg/L	1	8/27/2015 8:08:01 PM	R28522
Chloride	3.6	0.50		mg/L	1	8/27/2015 8:08:01 PM	R28522
Nitrogen, Nitrite (As N)	ND	0.10		mg/L	1	8/27/2015 8:08:01 PM	R28522
Bromide	ND	0.10		mg/L	1	8/27/2015 8:08:01 PM	R28522
Nitrogen, Nitrate (As N)	0.47	0.10		mg/L	1	8/27/2015 8:08:01 PM	R28522
Phosphorus, Orthophosphate (As P)	ND	0.50		mg/L	1	8/27/2015 8:08:01 PM	R28522
Sulfate	47	10		mg/L	20	8/27/2015 8:20:26 PM	R28522
SM2320B: ALKALINITY							Analyst: JRR
Bicarbonate (As CaCO3)	95.16	20.00		mg/L CaCO3	1	8/28/2015 3:40:22 PM	R28559
Carbonate (As CaCO3)	ND	2.000		mg/L CaCO3	1	8/28/2015 3:40:22 PM	R28559
Total Alkalinity (as CaCO3)	95.16	20.00		mg/L CaCO3	1	8/28/2015 3:40:22 PM	R28559
EPA METHOD 200.7: DISSOLVED METALS							Analyst: ELS
Barium	0.062	0.0020		mg/L	1	9/8/2015 5:06:25 PM	A28693
Cadmium	ND	0.0020		mg/L	1	9/8/2015 5:06:25 PM	A28693
Calcium	33	1.0		mg/L	1	9/8/2015 5:06:25 PM	A28693
Chromium	ND	0.0060		mg/L	1	9/8/2015 5:06:25 PM	A28693
Copper	ND	0.0060		mg/L	1	9/8/2015 5:06:25 PM	A28693
Iron	ND	0.020		mg/L	1	9/8/2015 5:06:25 PM	A28693
Magnesium	5.9	1.0		mg/L	1	9/8/2015 5:06:25 PM	A28693
Manganese	0.0031	0.0020		mg/L	1	9/8/2015 5:06:25 PM	A28693
Potassium	1.8	1.0		mg/L	1	9/8/2015 5:06:25 PM	A28693
Silver	ND	0.0050		mg/L	1	9/8/2015 5:06:25 PM	A28693
Sodium	17	1.0		mg/L	1	9/8/2015 5:06:25 PM	A28693
Zinc	0.018	0.010		mg/L	1	9/8/2015 5:06:25 PM	A28693
EPA METHOD 200.7: METALS							Analyst: JLF

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1508D27

Date Reported: 9/23/2015

CLIENT: Western Refining Southwest, Inc.

Client Sample ID: Outfall #3

Project: San Juan River Bluff 8-26-15

Collection Date: 8/26/2015 10:00:00 AM

Lab ID: 1508D27-002

Matrix: AQUEOUS

Received Date: 8/27/2015 8:10:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 200.7: METALS							Analyst: JLF
Arsenic	ND	0.020		mg/L	1	9/18/2015 2:07:51 PM	21141
Barium	0.065	0.0020		mg/L	1	9/8/2015 5:40:02 PM	21141
Cadmium	ND	0.0020		mg/L	1	9/8/2015 5:40:02 PM	21141
Chromium	ND	0.0060		mg/L	1	9/8/2015 5:40:02 PM	21141
Lead	ND	0.0050		mg/L	1	9/18/2015 2:07:51 PM	21141
Selenium	ND	0.050		mg/L	1	9/14/2015 6:24:44 PM	21141
Silver	ND	0.0050		mg/L	1	9/8/2015 5:40:02 PM	21141
EPA METHOD 245.1: MERCURY							Analyst: MED
Mercury	ND	0.00020		mg/L	1	9/8/2015 3:53:25 PM	21167
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	ND	0.050		mg/L	1	8/28/2015 12:24:10 AM	R28503
Surr: BFB	84.0	57.8-137		%REC	1	8/28/2015 12:24:10 AM	R28503
EPA METHOD 8260: VOLATILES SHORT LIST							Analyst: RAA
Benzene	ND	1.0		µg/L	1	8/28/2015 5:08:03 PM	A28552
Toluene	ND	1.0		µg/L	1	8/28/2015 5:08:03 PM	A28552
Ethylbenzene	ND	1.0		µg/L	1	8/28/2015 5:08:03 PM	A28552
Methyl tert-butyl ether (MTBE)	ND	1.0		µg/L	1	8/28/2015 5:08:03 PM	A28552
Xylenes, Total	ND	1.5		µg/L	1	8/28/2015 5:08:03 PM	A28552
Surr: 1,2-Dichloroethane-d4	96.7	70-130		%REC	1	8/28/2015 5:08:03 PM	A28552
Surr: 4-Bromofluorobenzene	104	70-130		%REC	1	8/28/2015 5:08:03 PM	A28552
Surr: Dibromofluoromethane	92.2	70-130		%REC	1	8/28/2015 5:08:03 PM	A28552
Surr: Toluene-d8	97.0	70-130		%REC	1	8/28/2015 5:08:03 PM	A28552

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1508D27

Date Reported: 9/23/2015

CLIENT: Western Refining Southwest, Inc.

Client Sample ID: Equipment Blank

Project: San Juan River Bluff 8-26-15

Collection Date: 8/26/2015 1:00:00 PM

Lab ID: 1508D27-003

Matrix: AQUEOUS

Received Date: 8/27/2015 8:10:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260: VOLATILES SHORT LIST						Analyst: RAA	
Benzene	ND	1.0		µg/L	1	8/28/2015 5:36:49 PM	A28552
Toluene	ND	1.0		µg/L	1	8/28/2015 5:36:49 PM	A28552
Ethylbenzene	ND	1.0		µg/L	1	8/28/2015 5:36:49 PM	A28552
Methyl tert-butyl ether (MTBE)	ND	1.0		µg/L	1	8/28/2015 5:36:49 PM	A28552
Xylenes, Total	ND	1.5		µg/L	1	8/28/2015 5:36:49 PM	A28552
Surr: 1,2-Dichloroethane-d4	98.0	70-130		%REC	1	8/28/2015 5:36:49 PM	A28552
Surr: 4-Bromofluorobenzene	103	70-130		%REC	1	8/28/2015 5:36:49 PM	A28552
Surr: Dibromofluoromethane	94.0	70-130		%REC	1	8/28/2015 5:36:49 PM	A28552
Surr: Toluene-d8	96.8	70-130		%REC	1	8/28/2015 5:36:49 PM	A28552

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1508D27

23-Sep-15

Client: Western Refining Southwest, Inc.

Project: San Juan River Bluff 8-26-15

Sample ID MB-21141	SampType: MBLK		TestCode: EPA Method 200.7: Metals							
Client ID: PBW	Batch ID: 21141		RunNo: 28693							
Prep Date: 9/4/2015	Analysis Date: 9/8/2015		SeqNo: 869412		Units: mg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	ND	0.0020								
Cadmium	ND	0.0020								
Chromium	ND	0.0060								
Silver	ND	0.0050								

Sample ID LCS-21141	SampType: LCS		TestCode: EPA Method 200.7: Metals							
Client ID: LCSW	Batch ID: 21141		RunNo: 28693							
Prep Date: 9/4/2015	Analysis Date: 9/8/2015		SeqNo: 869413		Units: mg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.50	0.0020	0.5000	0	100	85	115			
Cadmium	0.53	0.0020	0.5000	0	106	85	115			
Chromium	0.51	0.0060	0.5000	0	102	85	115			
Silver	0.097	0.0050	0.1000	0	97.3	85	115			

Sample ID LLCS-21141	SampType: LCSLL		TestCode: EPA Method 200.7: Metals							
Client ID: BatchQC	Batch ID: 21141		RunNo: 28693							
Prep Date: 9/4/2015	Analysis Date: 9/8/2015		SeqNo: 869414		Units: mg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.0020	0.0020	0.002000	0	101	50	150			
Cadmium	ND	0.0020	0.002000	0	92.5	50	150			
Chromium	0.0064	0.0060	0.006000	0	106	50	150			
Silver	0.0054	0.0050	0.005000	0	109	50	150			

Sample ID 1508D27-002EMS	SampType: MS		TestCode: EPA Method 200.7: Metals							
Client ID: Outfall #3	Batch ID: 21141		RunNo: 28704							
Prep Date: 9/4/2015	Analysis Date: 9/8/2015		SeqNo: 869988		Units: mg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.56	0.0020	0.5000	0.06497	98.9	70	130			
Cadmium	0.50	0.0020	0.5000	0	100	70	130			
Chromium	0.49	0.0060	0.5000	0	97.9	70	130			
Silver	0.099	0.0050	0.1000	0	99.4	70	130			

Sample ID 1508D27-002EMSD	SampType: MSD		TestCode: EPA Method 200.7: Metals							
Client ID: Outfall #3	Batch ID: 21141		RunNo: 28704							
Prep Date: 9/4/2015	Analysis Date: 9/8/2015		SeqNo: 869989		Units: mg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1508D27

23-Sep-15

Client: Western Refining Southwest, Inc.

Project: San Juan River Bluff 8-26-15

Sample ID	1508D27-002EMSD			SampType:	MSD			TestCode:	EPA Method 200.7: Metals		
Client ID:	Outfall #3			Batch ID:	21141			RunNo:	28704		
Prep Date:	9/4/2015			Analysis Date:	9/8/2015			SeqNo:	869989		
								Units:	mg/L		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Barium	0.56	0.0020	0.5000	0.06497	98.5	70	130	0.353	20		
Cadmium	0.50	0.0020	0.5000	0	101	70	130	0.805	20		
Chromium	0.49	0.0060	0.5000	0	98.8	70	130	0.940	20		
Silver	0.10	0.0050	0.1000	0	100	70	130	0.602	20		

Sample ID	MB-21141			SampType:	MBLK			TestCode:	EPA Method 200.7: Metals		
Client ID:	PBW			Batch ID:	21141			RunNo:	28856		
Prep Date:	9/4/2015			Analysis Date:	9/14/2015			SeqNo:	875326		
								Units:	mg/L		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Selenium	ND	0.050									

Sample ID	LCS-21141			SampType:	LCS			TestCode:	EPA Method 200.7: Metals		
Client ID:	LCSW			Batch ID:	21141			RunNo:	28856		
Prep Date:	9/4/2015			Analysis Date:	9/14/2015			SeqNo:	875327		
								Units:	mg/L		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Selenium	0.51	0.050	0.5000	0	103	85	115				

Sample ID	LLCS-21141			SampType:	LCSLL			TestCode:	EPA Method 200.7: Metals		
Client ID:	BatchQC			Batch ID:	21141			RunNo:	28856		
Prep Date:	9/4/2015			Analysis Date:	9/14/2015			SeqNo:	875328		
								Units:	mg/L		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Selenium	0.051	0.050	0.05000	0	101	50	150				

Sample ID	1508D27-002EMS			SampType:	MS			TestCode:	EPA Method 200.7: Metals		
Client ID:	Outfall #3			Batch ID:	21141			RunNo:	28856		
Prep Date:	9/4/2015			Analysis Date:	9/14/2015			SeqNo:	875331		
								Units:	mg/L		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Selenium	0.51	0.050	0.5000	0	101	70	130				

Sample ID	1508D27-002EMSD			SampType:	MSD			TestCode:	EPA Method 200.7: Metals		
Client ID:	Outfall #3			Batch ID:	21141			RunNo:	28856		
Prep Date:	9/4/2015			Analysis Date:	9/14/2015			SeqNo:	875332		
								Units:	mg/L		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Selenium	0.52	0.050	0.5000	0	104	70	130	2.35	20		

Qualifiers:

* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank
D Sample Diluted Due to Matrix	E Value above quantitation range
H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits
ND Not Detected at the Reporting Limit	P Sample pH Not In Range
R RPD outside accepted recovery limits	RL Reporting Detection Limit
S % Recovery outside of range due to dilution or matrix	

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1508D27

23-Sep-15

Client: Western Refining Southwest, Inc.

Project: San Juan River Bluff 8-26-15

Sample ID	MB-21141		SampType: MBLK		TestCode: EPA Method 200.7: Metals					
Client ID:	PBW		Batch ID: 21141		RunNo: 28958					
Prep Date:	9/4/2015		Analysis Date: 9/18/2015		SeqNo: 878676		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	ND	0.020								
Lead	ND	0.0050								

Sample ID	LCS-21141			SampType:	LCS		TestCode:	EPA Method 200.7: Metals			
Client ID:	LCSW			Batch ID:	21141		RunNo:	28958			
Prep Date:	9/4/2015			Analysis Date:	9/18/2015		SeqNo:	878680		Units:	mg/L
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Arsenic	0.53	0.020	0.5000	0	106	85	115				
Lead	0.50	0.0050	0.5000	0	101	85	115				

Sample ID	LLLCS-21141		SampType: LCSLL		TestCode: EPA Method 200.7: Metals					
Client ID:	BatchQC		Batch ID: 21141		RunNo: 28958					
Prep Date:	9/4/2015		Analysis Date: 9/18/2015		SeqNo: 878681		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	0.025	0.020	0.02000	0	123	50	150			
Lead	0.0054	0.0050	0.005000	0	108	50	150			

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1508D27

23-Sep-15

Client: Western Refining Southwest, Inc.

Project: San Juan River Bluff 8-26-15

Sample ID MB	SampType: MBLK		TestCode: EPA Method 200.7: Dissolved Metals							
Client ID: PBW	Batch ID: A28693		RunNo: 28693							
Prep Date:	Analysis Date: 9/8/2015		SeqNo: 869373		Units: mg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	ND	0.0020								
Cadmium	ND	0.0020								
Calcium	ND	1.0								
Chromium	ND	0.0060								
Copper	ND	0.0060								
Iron	ND	0.020								
Magnesium	ND	1.0								
Manganese	ND	0.0020								
Potassium	ND	1.0								
Silver	ND	0.0050								
Sodium	ND	1.0								
Zinc	ND	0.010								

Sample ID LCS	SampType: LCS		TestCode: EPA Method 200.7: Dissolved Metals							
Client ID: LCSW	Batch ID: A28693		RunNo: 28693							
Prep Date:	Analysis Date: 9/8/2015		SeqNo: 869374		Units: mg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.50	0.0020	0.5000	0	100	85	115			
Cadmium	0.52	0.0020	0.5000	0	104	85	115			
Calcium	51	1.0	50.00	0	103	85	115			
Chromium	0.50	0.0060	0.5000	0	100	85	115			
Copper	0.48	0.0060	0.5000	0	95.9	85	115			
Iron	0.53	0.020	0.5000	0	107	85	115			
Magnesium	52	1.0	50.00	0	103	85	115			
Manganese	0.49	0.0020	0.5000	0	97.2	85	115			
Potassium	49	1.0	50.00	0	98.5	85	115			
Silver	0.10	0.0050	0.1000	0	102	85	115			
Sodium	50	1.0	50.00	0	101	85	115			
Zinc	0.51	0.010	0.5000	0	102	85	115			

Sample ID LLLCS	SampType: LCSLL		TestCode: EPA Method 200.7: Dissolved Metals							
Client ID: BatchQC	Batch ID: A28693		RunNo: 28693							
Prep Date:	Analysis Date: 9/8/2015		SeqNo: 869375		Units: mg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.0021	0.0020	0.002000	0	106	50	150			
Cadmium	ND	0.0020	0.002000	0	88.0	50	150			
Calcium	ND	1.0	0.5000	0	103	50	150			
Chromium	0.0067	0.0060	0.006000	0	111	50	150			

Qualifiers:

* Value exceeds Maximum Contaminant Level.

D Sample Diluted Due to Matrix

H Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

R RPD outside accepted recovery limits

S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank

E Value above quantitation range

J Analyte detected below quantitation limits

P Sample pH Not In Range

RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1508D27

23-Sep-15

Client: Western Refining Southwest, Inc.

Project: San Juan River Bluff 8-26-15

Sample ID	LLLCS		SampType: LCSLL		TestCode: EPA Method 200.7: Dissolved Metals					
Client ID:	BatchQC		Batch ID: A28693		RunNo: 28693					
Prep Date:			Analysis Date: 9/8/2015		SeqNo: 869375		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Copper	0.0060	0.0060	0.006000	0	101	50	150			
Iron	ND	0.020	0.02000	0	85.0	50	150			
Magnesium	ND	1.0	0.5000	0	104	50	150			
Manganese	0.0023	0.0020	0.002000	0	116	50	150			
Potassium	ND	1.0	0.5000	0	96.7	50	150			
Silver	0.0056	0.0050	0.005000	0	112	50	150			
Sodium	ND	1.0	0.5000	0	104	50	150			
Zinc	ND	0.010	0.005000	0	93.4	50	150			

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1508D27

23-Sep-15

Client: Western Refining Southwest, Inc.

Project: San Juan River Bluff 8-26-15

Sample ID	LCS		SampType: LCS			TestCode: EPA 200.8: Dissolved Metals				
Client ID:	LCSW		Batch ID: F28733			RunNo: 28733				
Prep Date:			Analysis Date: 9/9/2015			SeqNo: 871152		Units: mg/L		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	0.026	0.0010	0.02500	0	102	85	115			
Lead	0.012	0.00050	0.01250	0	100	85	115			
Selenium	0.026	0.0010	0.02500	0	106	85	115			
Uranium	0.012	0.00050	0.01250	0	98.8	85	115			

Sample ID	LLCS		SampType: LCSLL			TestCode: EPA 200.8: Dissolved Metals				
Client ID:	BatchQC		Batch ID: F28733			RunNo: 28733				
Prep Date:			Analysis Date: 9/9/2015			SeqNo: 871155		Units: mg/L		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	ND	0.0010	0.001000	0	98.5	50	150			
Lead	0.00053	0.00050	0.0005000	0	106	50	150			
Selenium	0.0011	0.0010	0.001000	0	107	50	150			
Uranium	0.00050	0.00050	0.0005000	0	101	50	150			

Sample ID	MB		SampType: MBLK			TestCode: EPA 200.8: Dissolved Metals				
Client ID:	PBW		Batch ID: F28733			RunNo: 28733				
Prep Date:			Analysis Date: 9/9/2015			SeqNo: 871158		Units: mg/L		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	ND	0.0010								
Lead	ND	0.00050								
Selenium	ND	0.0010								
Uranium	ND	0.00050								

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1508D27

23-Sep-15

Client: Western Refining Southwest, Inc.**Project:** San Juan River Bluff 8-26-15

Sample ID	MB-21167		SampType:	MBLK		TestCode:	EPA Method 245.1: Mercury				
Client ID:	PBW		Batch ID:	21167		RunNo:	28700				
Prep Date:	9/8/2015		Analysis Date:	9/8/2015		SeqNo:	869710		Units: mg/L		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Mercury	ND	0.00020									

Sample ID	LCS-21167		SampType: LCS		TestCode: EPA Method 245.1: Mercury					
Client ID:	LCSW		Batch ID: 21167		RunNo: 28700					
Prep Date:	9/8/2015		Analysis Date: 9/8/2015		SeqNo: 869711		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.0049	0.00020	0.005000	0	97.4	80	120			

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1508D27

23-Sep-15

Client: Western Refining Southwest, Inc.

Project: San Juan River Bluff 8-26-15

Sample ID MB	SampType: MBLK		TestCode: EPA Method 300.0: Anions							
Client ID: PBW	Batch ID: R28522		RunNo: 28522							
Prep Date:	Analysis Date: 8/27/2015		SeqNo: 862614		Units: mg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	ND	0.10								
Chloride	ND	0.50								
Nitrogen, Nitrite (As N)	ND	0.10								
Bromide	ND	0.10								
Nitrogen, Nitrate (As N)	ND	0.10								
Phosphorus, Orthophosphate (As P)	ND	0.50								
Sulfate	ND	0.50								

Sample ID LCS	SampType: LCS		TestCode: EPA Method 300.0: Anions							
Client ID: LCSW	Batch ID: R28522		RunNo: 28522							
Prep Date:	Analysis Date: 8/27/2015		SeqNo: 862615		Units: mg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	0.51	0.10	0.5000	0	103	90	110			
Chloride	5.1	0.50	5.000	0	101	90	110			
Nitrogen, Nitrite (As N)	1.0	0.10	1.000	0	102	90	110			
Bromide	2.6	0.10	2.500	0	103	90	110			
Nitrogen, Nitrate (As N)	2.7	0.10	2.500	0	106	90	110			
Phosphorus, Orthophosphate (As P)	5.1	0.50	5.000	0	103	90	110			
Sulfate	10	0.50	10.00	0	104	90	110			

Sample ID MB	SampType: MBLK		TestCode: EPA Method 300.0: Anions							
Client ID: PBW	Batch ID: R28522		RunNo: 28522							
Prep Date:	Analysis Date: 8/27/2015		SeqNo: 862706		Units: mg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	ND	0.10								
Chloride	ND	0.50								
Nitrogen, Nitrite (As N)	ND	0.10								
Bromide	ND	0.10								
Nitrogen, Nitrate (As N)	ND	0.10								
Phosphorus, Orthophosphate (As P)	ND	0.50								
Sulfate	ND	0.50								

Sample ID LCS	SampType: LCS		TestCode: EPA Method 300.0: Anions							
Client ID: LCSW	Batch ID: R28522		RunNo: 28522							
Prep Date:	Analysis Date: 8/28/2015		SeqNo: 862708		Units: mg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	0.51	0.10	0.5000	0	102	90	110			

Qualifiers:

* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank
D Sample Diluted Due to Matrix	E Value above quantitation range
H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits
ND Not Detected at the Reporting Limit	P Sample pH Not In Range
R RPD outside accepted recovery limits	RL Reporting Detection Limit
S % Recovery outside of range due to dilution or matrix	

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1508D27

23-Sep-15

Client: Western Refining Southwest, Inc.**Project:** San Juan River Bluff 8-26-15

Sample ID	LCS		SampType: LCS			TestCode: EPA Method 300.0: Anions				
Client ID:	LCSW		Batch ID: R28522			RunNo: 28522				
Prep Date:	Analysis Date: 8/28/2015			SeqNo: 862708		Units: mg/L				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	4.9	0.50	5.000	0	99.0	90	110			
Nitrogen, Nitrite (As N)	0.99	0.10	1.000	0	99.4	90	110			
Bromide	2.5	0.10	2.500	0	101	90	110			
Nitrogen, Nitrate (As N)	2.6	0.10	2.500	0	104	90	110			
Phosphorus, Orthophosphate (As P	5.0	0.50	5.000	0	100	90	110			
Sulfate	10	0.50	10.00	0	101	90	110			

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1508D27

23-Sep-15

Client: Western Refining Southwest, Inc.

Project: San Juan River Bluff 8-26-15

Sample ID	MB-21009		SampType:	MBLK		TestCode:	EPA Method 8015D: Diesel Range				
Client ID:	PBW		Batch ID:	21009		RunNo:	28513				
Prep Date:	8/27/2015		Analysis Date:	8/28/2015		SeqNo:	863355		Units: mg/L		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Diesel Range Organics (DRO)	ND	0.20									
Motor Oil Range Organics (MRO)	ND	2.5									
Surr: DNOP	0.62		0.5000		124	84.6	165				

Sample ID	LCS-21009		SampType: LCS		TestCode: EPA Method 8015D: Diesel Range					
Client ID:	LCSW		Batch ID: 21009		RunNo: 28513					
Prep Date:	8/27/2015		Analysis Date: 8/28/2015		SeqNo: 863356		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	2.8	0.20	2.500	0	113	67.3	174			
Surr: DNOP	0.33		0.2500		130	84.6	165			

Sample ID	1508D27-001CMS		SampType: MS		TestCode: EPA Method 8015D: Diesel Range					
Client ID:	Outfall #2		Batch ID: 21009		RunNo: 28513					
Prep Date:	8/27/2015		Analysis Date: 8/28/2015		SeqNo: 863358		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	3.0	0.20	2.500	0	118	67.2	210			
Surr: DNOP	0.31		0.2500		122	84.6	165			

Sample ID	1508D27-001CMSD			SampType:	MSD		TestCode:	EPA Method 8015D: Diesel Range			
Client ID:	Outfall #2		Batch ID:		21009		RunNo:	28513			
Prep Date:	8/27/2015		Analysis Date:		8/28/2015		SeqNo:	863359		Units:	mg/L
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Diesel Range Organics (DRO)	2.7	0.20	2.500	0	109	67.2	210	8.30	33.9		
Surr: DNOP	0.30		0.2500		119	84.6	165	0	0		

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1508D27

23-Sep-15

Client: Western Refining Southwest, Inc.

Project: San Juan River Bluff 8-26-15

Sample ID	5ML RB		SampType: MBLK		TestCode: EPA Method 8015D: Gasoline Range					
Client ID:	PBW		Batch ID: R28503		RunNo: 28503					
Prep Date:			Analysis Date: 8/27/2015		SeqNo: 862204		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	0.050								
Surr: BFB	17		20.00		87.1	57.8	137			

Sample ID	2.5UG GRO LCS		SampType: LCS		TestCode: EPA Method 8015D: Gasoline Range					
Client ID:	LCSW		Batch ID: R28503		RunNo: 28503					
Prep Date:			Analysis Date: 8/27/2015		SeqNo: 862205		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	0.58	0.050	0.5000	0	116	80	120			
Surr: BFB	22		20.00		112	57.8	137			

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1508D27

23-Sep-15

Client: Western Refining Southwest, Inc.

Project: San Juan River Bluff 8-26-15

Sample ID	100ng lcs	SampType:	LCS	TestCode:	EPA Method 8260: Volatiles Short List						
Client ID:	LCSW	Batch ID:	A28552	RunNo:	28552						
Prep Date:		Analysis Date:	8/28/2015	SeqNo:	863662	Units:	µg/L				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Benzene	19	1.0	20.00	0	93.1	70	130				
Toluene	19	1.0	20.00	0	94.2	70	130				
Surr: 1,2-Dichloroethane-d4	10		10.00		100	70	130				
Surr: 4-Bromofluorobenzene	10		10.00		101	70	130				
Surr: Dibromofluoromethane	9.3		10.00		93.1	70	130				
Surr: Toluene-d8	10		10.00		102	70	130				

Sample ID	rb	SampType:	MBLK	TestCode:	EPA Method 8260: Volatiles Short List						
Client ID:	PBW	Batch ID:	A28552	RunNo:	28552						
Prep Date:		Analysis Date:	8/28/2015	SeqNo:	863667	Units:	µg/L				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Benzene	ND	1.0									
Toluene	ND	1.0									
Ethylbenzene	ND	1.0									
Methyl tert-butyl ether (MTBE)	ND	1.0									
Xylenes, Total	ND	1.5									
Surr: 1,2-Dichloroethane-d4	9.8		10.00		98.5	70	130				
Surr: 4-Bromofluorobenzene	10		10.00		101	70	130				
Surr: Dibromofluoromethane	9.6		10.00		96.1	70	130				
Surr: Toluene-d8	9.6		10.00		96.1	70	130				

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1508D27

23-Sep-15

Client: Western Refining Southwest, Inc.

Project: San Juan River Bluff 8-26-15

Sample ID	mb-1		SampType: MBLK		TestCode: SM2320B: Alkalinity					
Client ID:	PBW		Batch ID: R28559		RunNo: 28559					
Prep Date:			Analysis Date: 8/28/2015		SeqNo: 863825		Units: mg/L CaCO3			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Alkalinity (as CaCO3)	ND	20.00								

Sample ID	Ics-1		SampType: LCS		TestCode: SM2320B: Alkalinity					
Client ID:	LCSW		Batch ID: R28559		RunNo: 28559					
Prep Date:			Analysis Date: 8/28/2015		SeqNo: 863826		Units: mg/L CaCO3			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Alkalinity (as CaCO3)	79.32	20.00	80.00	0	99.2	90	110			

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit

Sample Log-In Check List

Client Name: **Western Refining Southw**

Work Order Number: **1508D27**

RcptNo: **1**

Received by/date:

Logged By: **Lindsay Mangin**

08/27/15
8/27/2015 8:10:00 AM

Completed By: **Lindsay Mangin**

8/27/2015 9:06:20 AM

Reviewed By:

CS

08/27/15

Chain of Custody

1. Custody seals intact on sample bottles? Yes ☐ No ☐ Not Present ☒
2. Is Chain of Custody complete? Yes ☒ No ☐ Not Present ☐
3. How was the sample delivered? Courier

Log In

4. Was an attempt made to cool the samples? Yes ☒ No ☐ NA ☐
5. Were all samples received at a temperature of >0° C to 6.0° C Yes ☒ No ☐ NA ☐
6. Sample(s) in proper container(s)? Yes ☒ No ☐
7. Sufficient sample volume for indicated test(s)? Yes ☒ No ☐
8. Are samples (except VOA and ONG) properly preserved? Yes ☒ No ☐
9. Was preservative added to bottles? Yes ☐ No ☒ NA ☐
10. VOA vials have zero headspace? Yes ☒ No ☐ No VOA Vials ☐
11. Were any sample containers received broken? Yes ☐ No ☒
12. Does paperwork match bottle labels?
(Note discrepancies on chain of custody) Yes ☒ No ☐
13. Are matrices correctly identified on Chain of Custody? Yes ☒ No ☐
14. Is it clear what analyses were requested? Yes ☒ No ☐
15. Were all holding times able to be met?
(If no, notify customer for authorization.) Yes ☒ No ☐

of preserved
bottles checked
for pH:

6

(<2 or >12 unless noted)

Adjusted? **no**

Checked by: **CS**

Special Handling (if applicable)

16. Was client notified of all discrepancies with this order? Yes ☐ No ☐ NA ☒

Person Notified:

Date:

By Whom:

Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding:

Client Instructions:

17. Additional remarks:

18. Cooler Information

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	1.4	Good	Yes			



Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

September 23, 2015

Kelly Robinson

Western Refining Southwest, Inc.

#50 CR 4990

Bloomfield, NM 87413

TEL: (505) 632-4166

FAX (505) 632-3911

RE: San Juan River Bluff 8-26-15

OrderNo.: 1508D32

Dear Kelly Robinson:

Hall Environmental Analysis Laboratory received 2 sample(s) on 8/27/2015 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to www.hallenvironmental.com or the state specific web sites. In order to properly interpret your results it is imperative that you review this report in its entirety. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. When necessary, data qualifiers are provided on both the sample analysis report and the QC summary report, both sections should be reviewed. All samples are reported, as received, unless otherwise indicated. Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH and residual chlorine are qualified as being analyzed outside of the recommended holding time.

Please don't hesitate to contact HEAL for any additional information or clarifications.

ADHS Cert #AZ0682 -- NMED-DWB Cert #NM9425 -- NMED-Micro Cert #NM0190

Sincerely,

A handwritten signature in black ink, appearing to read "Andy Freeman", with a stylized flourish at the end.

Andy Freeman

Laboratory Manager

4901 Hawkins NE

Albuquerque, NM 87109

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1508D32

Date Reported: 9/23/2015

CLIENT: Western Refining Southwest, Inc.

Client Sample ID: Upstream

Project: San Juan River Bluff 8-26-15

Collection Date: 8/26/2015 11:00:00 AM

Lab ID: 1508D32-001

Matrix: AQUEOUS

Received Date: 8/27/2015 8:10:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015D: DIESEL RANGE							Analyst: JME
Diesel Range Organics (DRO)	ND	0.20		mg/L	1	8/28/2015 5:44:53 PM	21009
Motor Oil Range Organics (MRO)	ND	2.5		mg/L	1	8/28/2015 5:44:53 PM	21009
Surr: DNOP	123	84.6-165		%REC	1	8/28/2015 5:44:53 PM	21009
EPA 200.8: DISSOLVED METALS							Analyst: DBD
Arsenic	0.0010	0.0010		mg/L	1	9/9/2015 9:00:15 PM	F28733
Lead	ND	0.00050		mg/L	1	9/9/2015 9:00:15 PM	F28733
Selenium	ND	0.0010		mg/L	1	9/9/2015 9:00:15 PM	F28733
Uranium	0.00062	0.00050		mg/L	1	9/9/2015 9:00:15 PM	F28733
EPA METHOD 300.0: ANIONS							Analyst: LGT
Fluoride	0.17	0.10		mg/L	1	8/27/2015 8:32:51 PM	R28522
Chloride	3.0	0.50		mg/L	1	8/27/2015 8:32:51 PM	R28522
Nitrogen, Nitrite (As N)	ND	0.10		mg/L	1	8/27/2015 8:32:51 PM	R28522
Bromide	ND	0.10		mg/L	1	8/27/2015 8:32:51 PM	R28522
Nitrogen, Nitrate (As N)	ND	0.10		mg/L	1	8/27/2015 8:32:51 PM	R28522
Phosphorus, Orthophosphate (As P)	ND	0.50		mg/L	1	8/27/2015 8:32:51 PM	R28522
Sulfate	54	10		mg/L	20	8/27/2015 8:45:16 PM	R28522
SM2510B: SPECIFIC CONDUCTANCE							Analyst: JRR
Conductivity	300	0.010		µmhos/cm	1	8/28/2015 3:58:28 PM	R28559
SM2320B: ALKALINITY							Analyst: JRR
Bicarbonate (As CaCO ₃)	91.56	20.00		mg/L CaCO ₃	1	8/28/2015 3:58:28 PM	R28559
Carbonate (As CaCO ₃)	ND	2.000		mg/L CaCO ₃	1	8/28/2015 3:58:28 PM	R28559
Total Alkalinity (as CaCO ₃)	91.56	20.00		mg/L CaCO ₃	1	8/28/2015 3:58:28 PM	R28559
SM2540C MOD: TOTAL DISSOLVED SOLIDS							Analyst: KS
Total Dissolved Solids	204	40.0	D	mg/L	1	8/31/2015 5:27:00 PM	21029
EPA METHOD 200.7: DISSOLVED METALS							Analyst: ELS
Barium	0.077	0.0020		mg/L	1	9/9/2015 3:29:20 PM	A28720
Cadmium	ND	0.0020		mg/L	1	9/9/2015 3:29:20 PM	A28720
Calcium	33	1.0		mg/L	1	9/9/2015 3:29:20 PM	A28720
Chromium	ND	0.0060		mg/L	1	9/9/2015 3:29:20 PM	A28720
Copper	ND	0.0060		mg/L	1	9/9/2015 3:29:20 PM	A28720
Iron	0.062	0.020		mg/L	1	9/9/2015 3:29:20 PM	A28720
Magnesium	5.4	1.0		mg/L	1	9/9/2015 3:29:20 PM	A28720
Manganese	0.010	0.0020		mg/L	1	9/9/2015 3:29:20 PM	A28720
Potassium	1.9	1.0		mg/L	1	9/9/2015 3:29:20 PM	A28720
Silver	ND	0.0050		mg/L	1	9/10/2015 12:34:30 PM	A28759
Sodium	19	1.0		mg/L	1	9/9/2015 3:29:20 PM	A28720

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1508D32

Date Reported: 9/23/2015

CLIENT: Western Refining Southwest, Inc.

Client Sample ID: Upstream

Project: San Juan River Bluff 8-26-15

Collection Date: 8/26/2015 11:00:00 AM

Lab ID: 1508D32-001

Matrix: AQUEOUS

Received Date: 8/27/2015 8:10:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 200.7: DISSOLVED METALS							Analyst: ELS
Zinc	0.021	0.010		mg/L	1	9/9/2015 3:29:20 PM	A28720
EPA METHOD 200.7: METALS							Analyst: JLF
Arsenic	ND	0.020		mg/L	1	9/8/2015 5:51:39 PM	21141
Barium	0.16	0.0020		mg/L	1	9/8/2015 5:51:39 PM	21141
Cadmium	ND	0.0020		mg/L	1	9/8/2015 5:51:39 PM	21141
Calcium	34	1.0		mg/L	1	9/9/2015 12:34:31 PM	21141
Chromium	ND	0.0060		mg/L	1	9/8/2015 5:51:39 PM	21141
Lead	ND	0.0050		mg/L	1	9/8/2015 5:51:39 PM	21141
Magnesium	6.4	1.0		mg/L	1	9/8/2015 5:51:39 PM	21141
Potassium	2.7	1.0		mg/L	1	9/8/2015 5:51:39 PM	21141
Selenium	ND	0.050		mg/L	1	9/8/2015 5:51:39 PM	21141
Silver	ND	0.0050		mg/L	1	9/8/2015 5:51:39 PM	21141
Sodium	19	1.0		mg/L	1	9/8/2015 5:51:39 PM	21141
EPA METHOD 245.1: MERCURY							Analyst: MED
Mercury	ND	0.00020		mg/L	1	9/8/2015 3:55:27 PM	21167
EPA METHOD 8015D: GASOLINE RANGE							Analyst: DJF
Gasoline Range Organics (GRO)	ND	0.050		mg/L	1	8/27/2015 3:59:35 PM	C28514
Surr: BFB	97.0	70-130		%REC	1	8/27/2015 3:59:35 PM	C28514
EPA METHOD 8260: VOLATILES SHORT LIST							Analyst: DJF
Benzene	ND	1.0		µg/L	1	8/27/2015 3:59:35 PM	B28514
Toluene	ND	1.0		µg/L	1	8/27/2015 3:59:35 PM	B28514
Ethylbenzene	ND	1.0		µg/L	1	8/27/2015 3:59:35 PM	B28514
Methyl tert-butyl ether (MTBE)	ND	1.0		µg/L	1	8/27/2015 3:59:35 PM	B28514
Xylenes, Total	ND	1.5		µg/L	1	8/27/2015 3:59:35 PM	B28514
Surr: 1,2-Dichloroethane-d4	94.4	70-130		%REC	1	8/27/2015 3:59:35 PM	B28514
Surr: 4-Bromofluorobenzene	100	70-130		%REC	1	8/27/2015 3:59:35 PM	B28514
Surr: Dibromofluoromethane	106	70-130		%REC	1	8/27/2015 3:59:35 PM	B28514
Surr: Toluene-d8	96.0	70-130		%REC	1	8/27/2015 3:59:35 PM	B28514

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1508D32

Date Reported: 9/23/2015

CLIENT: Western Refining Southwest, Inc.

Client Sample ID: Down Stream

Project: San Juan River Bluff 8-26-15

Collection Date: 8/26/2015 11:20:00 AM

Lab ID: 1508D32-002

Matrix: AQUEOUS

Received Date: 8/27/2015 8:10:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015D: DIESEL RANGE							Analyst: JME
Diesel Range Organics (DRO)	ND	0.20		mg/L	1	8/28/2015 6:06:24 PM	21009
Motor Oil Range Organics (MRO)	ND	2.5		mg/L	1	8/28/2015 6:06:24 PM	21009
Surr: DNOP	124	84.6-165		%REC	1	8/28/2015 6:06:24 PM	21009
EPA 200.8: DISSOLVED METALS							Analyst: DBD
Arsenic	ND	0.0010		mg/L	1	9/9/2015 9:06:25 PM	F28733
Lead	ND	0.00050		mg/L	1	9/9/2015 9:06:25 PM	F28733
Selenium	ND	0.0010		mg/L	1	9/9/2015 9:06:25 PM	F28733
Uranium	0.00064	0.00050		mg/L	1	9/9/2015 9:06:25 PM	F28733
EPA METHOD 300.0: ANIONS							Analyst: LGT
Fluoride	0.17	0.10		mg/L	1	8/27/2015 8:57:40 PM	R28522
Chloride	3.0	0.50		mg/L	1	8/27/2015 8:57:40 PM	R28522
Nitrogen, Nitrite (As N)	ND	0.10		mg/L	1	8/27/2015 8:57:40 PM	R28522
Bromide	ND	0.10		mg/L	1	8/27/2015 8:57:40 PM	R28522
Nitrogen, Nitrate (As N)	ND	0.10		mg/L	1	8/27/2015 8:57:40 PM	R28522
Phosphorus, Orthophosphate (As P)	ND	0.50		mg/L	1	8/27/2015 8:57:40 PM	R28522
Sulfate	54	10		mg/L	20	8/27/2015 9:10:05 PM	R28522
SM2510B: SPECIFIC CONDUCTANCE							Analyst: JRR
Conductivity	300	0.010		µmhos/cm	1	8/28/2015 4:06:21 PM	R28559
SM2320B: ALKALINITY							Analyst: JRR
Bicarbonate (As CaCO ₃)	92.12	20.00		mg/L CaCO ₃	1	8/28/2015 4:06:21 PM	R28559
Carbonate (As CaCO ₃)	ND	2.000		mg/L CaCO ₃	1	8/28/2015 4:06:21 PM	R28559
Total Alkalinity (as CaCO ₃)	92.12	20.00		mg/L CaCO ₃	1	8/28/2015 4:06:21 PM	R28559
SM2540C MOD: TOTAL DISSOLVED SOLIDS							Analyst: KS
Total Dissolved Solids	196	40.0	D	mg/L	1	8/31/2015 5:27:00 PM	21029
EPA METHOD 200.7: DISSOLVED METALS							Analyst: ELS
Barium	0.077	0.0020		mg/L	1	9/9/2015 3:31:27 PM	A28720
Cadmium	ND	0.0020		mg/L	1	9/9/2015 3:31:27 PM	A28720
Calcium	34	1.0		mg/L	1	9/9/2015 3:31:27 PM	A28720
Chromium	ND	0.0060		mg/L	1	9/9/2015 3:31:27 PM	A28720
Copper	ND	0.0060		mg/L	1	9/9/2015 3:31:27 PM	A28720
Iron	0.086	0.020		mg/L	1	9/9/2015 3:31:27 PM	A28720
Magnesium	5.4	1.0		mg/L	1	9/9/2015 3:31:27 PM	A28720
Manganese	0.011	0.0020		mg/L	1	9/9/2015 3:31:27 PM	A28720
Potassium	1.9	1.0		mg/L	1	9/9/2015 3:31:27 PM	A28720
Silver	ND	0.0050		mg/L	1	9/10/2015 12:36:35 PM	A28759
Sodium	18	1.0		mg/L	1	9/9/2015 3:31:27 PM	A28720

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1508D32

Date Reported: 9/23/2015

CLIENT: Western Refining Southwest, Inc.

Client Sample ID: Down Stream

Project: San Juan River Bluff 8-26-15

Collection Date: 8/26/2015 11:20:00 AM

Lab ID: 1508D32-002

Matrix: AQUEOUS

Received Date: 8/27/2015 8:10:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 200.7: DISSOLVED METALS							Analyst: ELS
Zinc	0.030	0.010		mg/L	1	9/9/2015 3:31:27 PM	A28720
EPA METHOD 200.7: METALS							Analyst: JLF
Arsenic	ND	0.020		mg/L	1	9/8/2015 6:00:54 PM	21141
Barium	0.13	0.0020		mg/L	1	9/8/2015 6:00:54 PM	21141
Cadmium	ND	0.0020		mg/L	1	9/8/2015 6:00:54 PM	21141
Calcium	34	1.0		mg/L	1	9/9/2015 12:42:32 PM	21141
Chromium	ND	0.0060		mg/L	1	9/8/2015 6:00:54 PM	21141
Lead	ND	0.0050		mg/L	1	9/8/2015 6:00:54 PM	21141
Magnesium	6.3	1.0		mg/L	1	9/8/2015 6:00:54 PM	21141
Potassium	2.6	1.0		mg/L	1	9/8/2015 6:00:54 PM	21141
Selenium	ND	0.050		mg/L	1	9/8/2015 6:00:54 PM	21141
Silver	ND	0.0050		mg/L	1	9/8/2015 6:00:54 PM	21141
Sodium	18	1.0		mg/L	1	9/8/2015 6:00:54 PM	21141
EPA METHOD 245.1: MERCURY							Analyst: MED
Mercury	ND	0.00020		mg/L	1	9/8/2015 3:57:29 PM	21167
EPA METHOD 8015D: GASOLINE RANGE							Analyst: DJF
Gasoline Range Organics (GRO)	ND	0.050		mg/L	1	8/27/2015 5:22:13 PM	C28514
Surr: BFB	99.4	70-130		%REC	1	8/27/2015 5:22:13 PM	C28514
EPA METHOD 8260: VOLATILES SHORT LIST							Analyst: DJF
Benzene	ND	1.0		µg/L	1	8/27/2015 5:22:13 PM	B28514
Toluene	ND	1.0		µg/L	1	8/27/2015 5:22:13 PM	B28514
Ethylbenzene	ND	1.0		µg/L	1	8/27/2015 5:22:13 PM	B28514
Methyl tert-butyl ether (MTBE)	ND	1.0		µg/L	1	8/27/2015 5:22:13 PM	B28514
Xylenes, Total	ND	1.5		µg/L	1	8/27/2015 5:22:13 PM	B28514
Surr: 1,2-Dichloroethane-d4	93.4	70-130		%REC	1	8/27/2015 5:22:13 PM	B28514
Surr: 4-Bromofluorobenzene	103	70-130		%REC	1	8/27/2015 5:22:13 PM	B28514
Surr: Dibromofluoromethane	111	70-130		%REC	1	8/27/2015 5:22:13 PM	B28514
Surr: Toluene-d8	101	70-130		%REC	1	8/27/2015 5:22:13 PM	B28514

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1508D32

23-Sep-15

Client: Western Refining Southwest, Inc.

Project: San Juan River Bluff 8-26-15

Sample ID MB-21141	SampType: MBLK		TestCode: EPA Method 200.7: Metals							
Client ID: PBW	Batch ID: 21141		RunNo: 28693							
Prep Date: 9/4/2015	Analysis Date: 9/8/2015		SeqNo: 869412		Units: mg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	ND	0.0020								
Cadmium	ND	0.0020								
Calcium	ND	1.0								
Chromium	ND	0.0060								
Magnesium	ND	1.0								
Potassium	ND	1.0								
Silver	ND	0.0050								
Sodium	ND	1.0								

Sample ID LCS-21141	SampType: LCS		TestCode: EPA Method 200.7: Metals							
Client ID: LCSW	Batch ID: 21141		RunNo: 28693							
Prep Date: 9/4/2015	Analysis Date: 9/8/2015		SeqNo: 869413		Units: mg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.50	0.0020	0.5000	0	100	85	115			
Cadmium	0.53	0.0020	0.5000	0	106	85	115			
Calcium	52	1.0	50.00	0	103	85	115			
Chromium	0.51	0.0060	0.5000	0	102	85	115			
Magnesium	52	1.0	50.00	0	104	85	115			
Potassium	50	1.0	50.00	0	99.7	85	115			
Silver	0.097	0.0050	0.1000	0	97.3	85	115			
Sodium	51	1.0	50.00	0	102	85	115			

Sample ID LLCS-21141	SampType: LCSLL		TestCode: EPA Method 200.7: Metals							
Client ID: BatchQC	Batch ID: 21141		RunNo: 28693							
Prep Date: 9/4/2015	Analysis Date: 9/8/2015		SeqNo: 869414		Units: mg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.0020	0.0020	0.002000	0	101	50	150			
Cadmium	ND	0.0020	0.002000	0	92.5	50	150			
Calcium	ND	1.0	0.5000	0	98.5	50	150			
Chromium	0.0064	0.0060	0.006000	0	106	50	150			
Magnesium	ND	1.0	0.5000	0	102	50	150			
Potassium	ND	1.0	0.5000	0	99.2	50	150			
Silver	0.0054	0.0050	0.005000	0	109	50	150			
Sodium	ND	1.0	0.5000	0	106	50	150			

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1508D32

23-Sep-15

Client: Western Refining Southwest, Inc.

Project: San Juan River Bluff 8-26-15

Sample ID	MB-21141		SampType: MBLK		TestCode: EPA Method 200.7: Metals					
Client ID:	PBW		Batch ID: 21141		RunNo: 28856					
Prep Date:	9/4/2015		Analysis Date: 9/14/2015		SeqNo: 875326		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Selenium	ND	0.050								

Sample ID	LCS-21141			SampType:	LCS		TestCode:	EPA Method 200.7: Metals			
Client ID:	LCSW			Batch ID:	21141		RunNo:	28856			
Prep Date:	9/4/2015			Analysis Date:	9/14/2015		SeqNo:	875327		Units:	mg/L
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Selenium	0.51	0.050	0.5000	0	103	85	115				

Sample ID	LLLCS-21141	SampType:	LCSLL	TestCode:	EPA Method 200.7: Metals					
Client ID:	BatchQC	Batch ID:	21141	RunNo:	28856					
Prep Date:	9/4/2015	Analysis Date:	9/14/2015	SeqNo:	875328	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Selenium	0.051	0.050	0.05000	0	101	50	150			

Sample ID	MB-21141		SampType:	MBLK		TestCode:	EPA Method 200.7: Metals				
Client ID:	PBW		Batch ID:	21141		RunNo:	28958				
Prep Date:	9/4/2015		Analysis Date:	9/18/2015		SeqNo:	878676		Units: mg/L		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Arsenic	ND	0.020									
Lead	ND	0.0050									

Sample ID	LCS-21141			SampType:	LCS		TestCode:	EPA Method 200.7: Metals				
Client ID:	LCSW			Batch ID:	21141		RunNo:	28958				
Prep Date:	9/4/2015			Analysis Date:	9/18/2015		SeqNo:	878680			Units:	mg/L
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual		
Arsenic	0.53	0.020	0.5000	0	106	85	115					
Lead	0.50	0.0050	0.5000	0	101	85	115					

Sample ID	LLLCS-21141		SampType: LCSLL		TestCode: EPA Method 200.7: Metals					
Client ID:	BatchQC		Batch ID: 21141		RunNo: 28958					
Prep Date:	9/4/2015		Analysis Date: 9/18/2015		SeqNo: 878681		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	0.025	0.020	0.02000	0	123	50	150			
Lead	0.0054	0.0050	0.005000	0	108	50	150			

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1508D32

23-Sep-15

Client: Western Refining Southwest, Inc.

Project: San Juan River Bluff 8-26-15

Sample ID MB	SampType: MBLK		TestCode: EPA Method 200.7: Dissolved Metals							
Client ID: PBW	Batch ID: A28720		RunNo: 28720							
Prep Date:	Analysis Date: 9/9/2015		SeqNo: 870468		Units: mg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Barium	ND	0.0020								
Cadmium	ND	0.0020								
Calcium	ND	1.0								
Chromium	ND	0.0060								
Copper	ND	0.0060								
Iron	ND	0.020								
Magnesium	ND	1.0								
Manganese	ND	0.0020								
Potassium	ND	1.0								
Sodium	ND	1.0								
Zinc	ND	0.010								

Sample ID LCS	SampType: LCS		TestCode: EPA Method 200.7: Dissolved Metals							
Client ID: LCSW	Batch ID: A28720		RunNo: 28720							
Prep Date:	Analysis Date: 9/9/2015		SeqNo: 870469		Units: mg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Barium	0.49	0.0020	0.5000	0	97.6	85	115			
Cadmium	0.51	0.0020	0.5000	0	101	85	115			
Calcium	50	1.0	50.00	0	99.4	85	115			
Chromium	0.49	0.0060	0.5000	0	99.0	85	115			
Copper	0.47	0.0060	0.5000	0	93.2	85	115			
Iron	0.51	0.020	0.5000	0	101	85	115			
Magnesium	50	1.0	50.00	0	101	85	115			
Manganese	0.48	0.0020	0.5000	0	96.1	85	115			
Potassium	48	1.0	50.00	0	96.9	85	115			
Sodium	50	1.0	50.00	0	99.4	85	115			
Zinc	0.49	0.010	0.5000	0	97.7	85	115			

Sample ID LLCS	SampType: LCSLL		TestCode: EPA Method 200.7: Dissolved Metals							
Client ID: BatchQC	Batch ID: A28720		RunNo: 28720							
Prep Date:	Analysis Date: 9/9/2015		SeqNo: 870470		Units: mg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Barium	ND	0.0020	0.002000	0	93.0	50	150			
Cadmium	ND	0.0020	0.002000	0	74.5	50	150			
Calcium	ND	1.0	0.5000	0	99.1	50	150			
Chromium	0.0064	0.0060	0.006000	0	107	50	150			
Copper	ND	0.0060	0.006000	0	90.5	50	150			
Iron	ND	0.020	0.02000	0	77.4	50	150			

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1508D32

23-Sep-15

Client: Western Refining Southwest, Inc.

Project: San Juan River Bluff 8-26-15

Sample ID	LLLCS		SampType:	LCSLL		TestCode:	EPA Method 200.7: Dissolved Metals			
Client ID:	BatchQC		Batch ID:	A28720		RunNo:	28720			
Prep Date:			Analysis Date:	9/9/2015		SeqNo:	870470		Units: mg/L	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Magnesium	ND	1.0	0.5000	0	100	50	150			
Manganese	ND	0.0020	0.002000	0	94.0	50	150			
Potassium	ND	1.0	0.5000	0	98.8	50	150			
Sodium	ND	1.0	0.5000	0	102	50	150			
Zinc	ND	0.010	0.005000	0	121	50	150			

Sample ID	1508D32-002FMS		SampType:	MS		TestCode:	EPA Method 200.7: Dissolved Metals			
Client ID:	Down Stream		Batch ID:	A28720		RunNo:	28720			
Prep Date:			Analysis Date:	9/9/2015		SeqNo:	870820		Units: mg/L	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.57	0.0020	0.5000	0.07726	97.6	70	130			
Cadmium	0.50	0.0020	0.5000	0	99.5	70	130			
Calcium	83	1.0	50.00	33.99	98.1	70	130			
Chromium	0.48	0.0060	0.5000	0	95.0	70	130			
Copper	0.47	0.0060	0.5000	0	93.8	70	130			
Iron	0.60	0.020	0.5000	0.08614	102	70	130			
Magnesium	54	1.0	50.00	5.416	97.5	70	130			
Manganese	0.51	0.0020	0.5000	0.01125	99.1	70	130			
Potassium	50	1.0	50.00	1.920	95.3	70	130			
Sodium	66	1.0	50.00	17.89	96.8	70	130			
Zinc	0.51	0.010	0.5000	0.03024	96.2	70	130			

Sample ID	1508D32-002FMDS		SampType:	MSD		TestCode:	EPA Method 200.7: Dissolved Metals			
Client ID:	Down Stream		Batch ID:	A28720		RunNo:	28720			
Prep Date:			Analysis Date:	9/9/2015		SeqNo:	870821		Units: mg/L	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.55	0.0020	0.5000	0.07726	94.4	70	130	2.89	20	
Cadmium	0.49	0.0020	0.5000	0	97.2	70	130	2.39	20	
Calcium	82	1.0	50.00	33.99	95.1	70	130	1.81	20	
Chromium	0.46	0.0060	0.5000	0	92.7	70	130	2.46	20	
Copper	0.45	0.0060	0.5000	0	90.6	70	130	3.51	20	
Iron	0.58	0.020	0.5000	0.08614	98.6	70	130	2.83	20	
Magnesium	53	1.0	50.00	5.416	94.2	70	130	3.05	20	
Manganese	0.49	0.0020	0.5000	0.01125	96.0	70	130	3.14	20	
Potassium	48	1.0	50.00	1.920	92.0	70	130	3.39	20	
Sodium	65	1.0	50.00	17.89	93.4	70	130	2.62	20	
Zinc	0.50	0.010	0.5000	0.03024	94.9	70	130	1.27	20	

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1508D32

23-Sep-15

Client: Western Refining Southwest, Inc.

Project: San Juan River Bluff 8-26-15

Sample ID	MB	SampType: MBLK			TestCode: EPA Method 200.7: Dissolved Metals						
Client ID:	PBW	Batch ID: A28759			RunNo: 28759						
Prep Date:		Analysis Date: 9/10/2015			SeqNo: 871968		Units: mg/L				
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Silver		ND	0.0050								

Sample ID	LCS	SampType:	LCS	TestCode:	EPA Method 200.7: Dissolved Metals						
Client ID:	LCSW	Batch ID:	A28759	RunNo:	28759						
Prep Date:		Analysis Date:	9/10/2015	SeqNo:	871969	Units:	mg/L				
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Silver		0.088	0.0050	0.1000	0	87.9	85	115			

Sample ID	LLLCS	SampType:	LCSLL	TestCode:	EPA Method 200.7: Dissolved Metals						
Client ID:	BatchQC	Batch ID:	A28759	RunNo:	28759						
Prep Date:		Analysis Date:	9/10/2015	SeqNo:	871970	Units:	mg/L				
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Silver		ND	0.0050	0.005000	0	85.6	50	150			

Sample ID	1508D32-002FMS	SampType:	MS			TestCode:	EPA Method 200.7: Dissolved Metals				
Client ID:	Down Stream	Batch ID:	A28759			RunNo:	28759				
Prep Date:		Analysis Date:	9/10/2015			SeqNo:	872046	Units:	mg/L		
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Silver		0.092	0.0050	0.1000	0	92.4	70	130			

Sample ID	1508D32-002FMSD	SampType:	MSD			TestCode:	EPA Method 200.7: Dissolved Metals				
Client ID:	Down Stream	Batch ID:	A28759			RunNo:	28759				
Prep Date:		Analysis Date:	9/10/2015			SeqNo:	872047	Units:	mg/L		
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Silver		0.092	0.0050	0.1000	0	91.5	70	130	0.968	20	

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1508D32

23-Sep-15

Client: Western Refining Southwest, Inc.

Project: San Juan River Bluff 8-26-15

Sample ID	LCS		SampType: LCS		TestCode: EPA 200.8: Dissolved Metals					
Client ID:	LCSW		Batch ID: F28733		RunNo: 28733					
Prep Date:			Analysis Date: 9/9/2015		SeqNo: 871152		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	0.026	0.0010	0.02500	0	102	85	115			
Lead	0.012	0.00050	0.01250	0	100	85	115			
Selenium	0.026	0.0010	0.02500	0	106	85	115			
Uranium	0.012	0.00050	0.01250	0	98.8	85	115			

Sample ID	LLCS		SampType: LCSLL		TestCode: EPA 200.8: Dissolved Metals					
Client ID:	BatchQC		Batch ID: F28733		RunNo: 28733					
Prep Date:			Analysis Date: 9/9/2015		SeqNo: 871155		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	ND	0.0010	0.001000	0	98.5	50	150			
Lead	0.00053	0.00050	0.0005000	0	106	50	150			
Selenium	0.0011	0.0010	0.001000	0	107	50	150			
Uranium	0.00050	0.00050	0.0005000	0	101	50	150			

Sample ID	MB	SampType: MBLK			TestCode: EPA 200.8: Dissolved Metals					
Client ID:	PBW	Batch ID: F28733			RunNo: 28733					
Prep Date:		Analysis Date: 9/9/2015			SeqNo: 871158		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	ND	0.0010								
Lead	ND	0.00050								
Selenium	ND	0.0010								
Uranium	ND	0.00050								

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1508D32

23-Sep-15

Client: Western Refining Southwest, Inc.**Project:** San Juan River Bluff 8-26-15

Sample ID	MB-21167		SampType:	MBLK		TestCode:	EPA Method 245.1: Mercury				
Client ID:	PBW		Batch ID:	21167		RunNo:	28700				
Prep Date:	9/8/2015		Analysis Date:	9/8/2015		SeqNo:	869710		Units: mg/L		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Mercury	ND	0.00020									

Sample ID	LCS-21167			SampType:	LCS		TestCode:	EPA Method 245.1: Mercury			
Client ID:	LCSW			Batch ID:	21167		RunNo:	28700			
Prep Date:	9/8/2015			Analysis Date:	9/8/2015		SeqNo:	869711		Units:	mg/L
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Mercury	0.0049	0.00020	0.005000	0	97.4	80	120				

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1508D32

23-Sep-15

Client: Western Refining Southwest, Inc.

Project: San Juan River Bluff 8-26-15

Sample ID MB	SampType: MBLK		TestCode: EPA Method 300.0: Anions							
Client ID: PBW	Batch ID: R28522		RunNo: 28522							
Prep Date:	Analysis Date: 8/27/2015		SeqNo: 862614		Units: mg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	ND	0.10								
Chloride	ND	0.50								
Nitrogen, Nitrite (As N)	ND	0.10								
Bromide	ND	0.10								
Nitrogen, Nitrate (As N)	ND	0.10								
Phosphorus, Orthophosphate (As P)	ND	0.50								
Sulfate	ND	0.50								

Sample ID LCS	SampType: LCS		TestCode: EPA Method 300.0: Anions							
Client ID: LCSW	Batch ID: R28522		RunNo: 28522							
Prep Date:	Analysis Date: 8/27/2015		SeqNo: 862615		Units: mg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	0.51	0.10	0.5000	0	103	90	110			
Chloride	5.1	0.50	5.000	0	101	90	110			
Nitrogen, Nitrite (As N)	1.0	0.10	1.000	0	102	90	110			
Bromide	2.6	0.10	2.500	0	103	90	110			
Nitrogen, Nitrate (As N)	2.7	0.10	2.500	0	106	90	110			
Phosphorus, Orthophosphate (As P)	5.1	0.50	5.000	0	103	90	110			
Sulfate	10	0.50	10.00	0	104	90	110			

Sample ID MB	SampType: MBLK		TestCode: EPA Method 300.0: Anions							
Client ID: PBW	Batch ID: R28522		RunNo: 28522							
Prep Date:	Analysis Date: 8/27/2015		SeqNo: 862706		Units: mg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	ND	0.10								
Chloride	ND	0.50								
Nitrogen, Nitrite (As N)	ND	0.10								
Bromide	ND	0.10								
Nitrogen, Nitrate (As N)	ND	0.10								
Phosphorus, Orthophosphate (As P)	ND	0.50								
Sulfate	ND	0.50								

Sample ID LCS	SampType: LCS		TestCode: EPA Method 300.0: Anions							
Client ID: LCSW	Batch ID: R28522		RunNo: 28522							
Prep Date:	Analysis Date: 8/28/2015		SeqNo: 862708		Units: mg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	0.51	0.10	0.5000	0	102	90	110			

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1508D32

23-Sep-15

Client: Western Refining Southwest, Inc.

Project: San Juan River Bluff 8-26-15

Sample ID	LCS		SampType: LCS			TestCode: EPA Method 300.0: Anions				
Client ID:	LCSW		Batch ID: R28522			RunNo: 28522				
Prep Date:	Analysis Date: 8/28/2015			SeqNo: 862708		Units: mg/L				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	4.9	0.50	5.000	0	99.0	90	110			
Nitrogen, Nitrite (As N)	0.99	0.10	1.000	0	99.4	90	110			
Bromide	2.5	0.10	2.500	0	101	90	110			
Nitrogen, Nitrate (As N)	2.6	0.10	2.500	0	104	90	110			
Phosphorus, Orthophosphate (As P	5.0	0.50	5.000	0	100	90	110			
Sulfate	10	0.50	10.00	0	101	90	110			

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1508D32

23-Sep-15

Client: Western Refining Southwest, Inc.

Project: San Juan River Bluff 8-26-15

Sample ID	MB-21009		SampType: MBLK		TestCode: EPA Method 8015D: Diesel Range					
Client ID:	PBW		Batch ID: 21009		RunNo: 28513					
Prep Date:	8/27/2015		Analysis Date: 8/28/2015		SeqNo: 863355		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	0.20								
Motor Oil Range Organics (MRO)	ND	2.5								
Surr: DNOP	0.62		0.5000		124	84.6	165			

Sample ID	LCS-21009		SampType: LCS		TestCode: EPA Method 8015D: Diesel Range					
Client ID:	LCSW		Batch ID: 21009		RunNo: 28513					
Prep Date:	8/27/2015		Analysis Date: 8/28/2015		SeqNo: 863356		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	2.8	0.20	2.500	0	113	67.3	174			
Surr: DNOP	0.33		0.2500		130	84.6	165			

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1508D32

23-Sep-15

Client: Western Refining Southwest, Inc.

Project: San Juan River Bluff 8-26-15

Sample ID	rb2	SampType: MBLK			TestCode: EPA Method 8260: Volatiles Short List					
Client ID:	PBW	Batch ID: B28514			RunNo: 28514					
Prep Date:		Analysis Date: 8/28/2015			SeqNo: 862261		Units: µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	1.0								
Toluene	ND	1.0								
Ethylbenzene	ND	1.0								
Methyl tert-butyl ether (MTBE)	ND	1.0								
Xylenes, Total	ND	1.5								
Surr: 1,2-Dichloroethane-d4	9.4		10.00		94.0	70	130			
Surr: 4-Bromofluorobenzene	10		10.00		104	70	130			
Surr: Dibromofluoromethane	11		10.00		110	70	130			
Surr: Toluene-d8	9.8		10.00		98.0	70	130			

Sample ID	100ng lcs2		SampType: LCS		TestCode: EPA Method 8260: Volatiles Short List					
Client ID:	LCSW		Batch ID: B28514		RunNo: 28514					
Prep Date:			Analysis Date: 8/28/2015		SeqNo: 862262		Units: µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	21	1.0	20.00	0	107	70	130			
Toluene	20	1.0	20.00	0	99.8	70	130			
Surr: 1,2-Dichloroethane-d4	9.7		10.00		97.2	70	130			
Surr: 4-Bromofluorobenzene	10		10.00		101	70	130			
Surr: Dibromofluoromethane	11		10.00		108	70	130			
Surr: Toluene-d8	9.4		10.00		93.5	70	130			

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1508D32

23-Sep-15

Client: Western Refining Southwest, Inc.

Project: San Juan River Bluff 8-26-15

Sample ID rb	SampType: MBLK		TestCode: EPA Method 8015D: Gasoline Range							
Client ID: PBW	Batch ID: C28514		RunNo: 28514							
Prep Date:	Analysis Date: 8/27/2015		SeqNo: 862351		Units: mg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	0.050								
Surr: BFB	9.6		10.00		96.4	70	130			

Sample ID 2.5ug gro lcs	SampType: LCS		TestCode: EPA Method 8015D: Gasoline Range							
Client ID: LCSW	Batch ID: C28514		RunNo: 28514							
Prep Date:	Analysis Date: 8/27/2015		SeqNo: 862363		Units: mg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	0.44	0.050	0.5000	0	88.0	80.6	122			
Surr: BFB	9.9		10.00		99.1	70	130			

Sample ID 1508D32-001B MS	SampType: MS		TestCode: EPA Method 8015D: Gasoline Range							
Client ID: Upstream	Batch ID: C28514		RunNo: 28514							
Prep Date:	Analysis Date: 8/27/2015		SeqNo: 862369		Units: mg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	0.38	0.050	0.5000	0	75.4	53.8	128			
Surr: BFB	10		10.00		103	70	130			

Sample ID 1508D32-001B MSD	SampType: MSD		TestCode: EPA Method 8015D: Gasoline Range							
Client ID: Upstream	Batch ID: C28514		RunNo: 28514							
Prep Date:	Analysis Date: 8/27/2015		SeqNo: 862370		Units: mg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	0.39	0.050	0.5000	0	77.0	53.8	128	2.15	20	
Surr: BFB	10		10.00		104	70	130	0	0	

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1508D32

23-Sep-15

Client: Western Refining Southwest, Inc.

Project: San Juan River Bluff 8-26-15

Sample ID	mb-1		SampType: MBLK		TestCode: SM2320B: Alkalinity					
Client ID:	PBW		Batch ID: R28559		RunNo: 28559					
Prep Date:			Analysis Date: 8/28/2015		SeqNo: 863825		Units: mg/L CaCO3			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Alkalinity (as CaCO3)	ND	20.00								

Sample ID	Ics-1		SampType: LCS			TestCode: SM2320B: Alkalinity				
Client ID:	LCSW		Batch ID: R28559			RunNo: 28559				
Prep Date:			Analysis Date: 8/28/2015			SeqNo: 863826		Units: mg/L CaCO3		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Alkalinity (as CaCO3)	79.32	20.00	80.00	0	99.2	90	110			

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1508D32

23-Sep-15

Client: Western Refining Southwest, Inc.**Project:** San Juan River Bluff 8-26-15

Sample ID	MB-21029		SampType:	MBLK		TestCode:	SM2540C MOD: Total Dissolved Solids				
Client ID:	PBW		Batch ID:	21029		RunNo:	28566				
Prep Date:	8/28/2015		Analysis Date:	8/31/2015		SeqNo:	863956		Units: mg/L		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Total Dissolved Solids	ND	20.0									

Sample ID	LCS-21029		SampType: LCS		TestCode: SM2540C MOD: Total Dissolved Solids					
Client ID:	LCSW		Batch ID: 21029		RunNo: 28566					
Prep Date:	8/28/2015		Analysis Date: 8/31/2015		SeqNo: 863957		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Dissolved Solids	1050	20.0	1000	0	105	80	120			

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit

Sample Log-In Check List

Client Name: **Western Refining Southw**

Work Order Number: **1508D32**

RcptNo: 1

Received by/date:

Logged By: **Lindsay Mangin**

08/27/15
8/27/2015 8:10:00 AM

Completed By: **Lindsay Mangin**

8/27/2015 10:26:45 AM

Reviewed By:

Chain of Custody

1. Custody seals intact on sample bottles? Yes ☐ No ☐ Not Present ☒
2. Is Chain of Custody complete? Yes ☒ No ☐ Not Present ☐
3. How was the sample delivered? Courier

Log In

4. Was an attempt made to cool the samples? Yes ☒ No ☐ NA ☐
5. Were all samples received at a temperature of >0° C to 6.0° C Yes ☒ No ☐ NA ☐
6. Sample(s) in proper container(s)? Yes ☒ No ☐
7. Sufficient sample volume for indicated test(s)? Yes ☒ No ☐
8. Are samples (except VOA and ONG) properly preserved? Yes ☒ No ☐
9. Was preservative added to bottles? Yes ☐ No ☒ NA ☐
10. VOA vials have zero headspace? Yes ☒ No ☐ No VOA Vials ☐
11. Were any sample containers received broken? Yes ☐ No ☒
12. Does paperwork match bottle labels?
(Note discrepancies on chain of custody) Yes ☒ No ☐
13. Are matrices correctly identified on Chain of Custody? Yes ☒ No ☐
14. Is it clear what analyses were requested? Yes ☒ No ☐
15. Were all holding times able to be met?
(If no, notify customer for authorization.) Yes ☒ No ☐

of preserved
bottles checked
for pH: **6**
(**<2** or **>12** unless noted)
Adjusted? **no**
Checked by: **CS**

Special Handling (if applicable)

16. Was client notified of all discrepancies with this order? Yes ☐ No ☐ NA ☒

Person Notified:

Date:

By Whom:

Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding:

Client Instructions:

17. Additional remarks:

18. Cooler Information

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	1.4	Good	Yes			



Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

October 07, 2015

Kelly Robinson

Western Refining Southwest, Inc.
#50 CR 4990

Bloomfield, NM 87413

TEL: (505) 632-4166

FAX (505) 632-3911

RE: San Juan River 9-1-15

OrderNo.: 1509079

Dear Kelly Robinson:

Hall Environmental Analysis Laboratory received 3 sample(s) on 9/2/2015 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to www.hallenvironmental.com or the state specific web sites. In order to properly interpret your results it is imperative that you review this report in its entirety. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. When necessary, data qualifiers are provided on both the sample analysis report and the QC summary report, both sections should be reviewed. All samples are reported, as received, unless otherwise indicated. Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH and residual chlorine are qualified as being analyzed outside of the recommended holding time.

Please don't hesitate to contact HEAL for any additional information or clarifications.

ADHS Cert #AZ0682 -- NMED-DWB Cert #NM9425 -- NMED-Micro Cert #NM0190

Sincerely,

A handwritten signature in black ink, appearing to read "Andy Freeman", with a stylized flourish at the end.

Andy Freeman

Laboratory Manager

4901 Hawkins NE

Albuquerque, NM 87109

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1509079

Date Reported: 10/7/2015

CLIENT: Western Refining Southwest, Inc.

Client Sample ID: North of 45

Project: San Juan River 9-1-15

Collection Date: 9/1/2015 12:30:00 PM

Lab ID: 1509079-001

Matrix: AQUEOUS

Received Date: 9/2/2015 8:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015D: DIESEL RANGE							Analyst: JME
Diesel Range Organics (DRO)	ND	0.20		mg/L	1	9/2/2015 11:36:56 PM	21109
Motor Oil Range Organics (MRO)	ND	2.5		mg/L	1	9/2/2015 11:36:56 PM	21109
Surr: DNOP	117	84.6-165		%REC	1	9/2/2015 11:36:56 PM	21109
EPA 200.8: DISSOLVED METALS							Analyst: DBD
Arsenic	ND	0.0010		mg/L	1	9/16/2015 1:33:15 PM	B28886
Lead	ND	0.00050		mg/L	1	9/16/2015 1:33:15 PM	B28886
Selenium	ND	0.0010		mg/L	1	9/16/2015 1:33:15 PM	B28886
Uranium	0.00066	0.00050		mg/L	1	9/16/2015 1:33:15 PM	B28886
EPA METHOD 300.0: ANIONS							Analyst: LGT
Fluoride	0.17	0.10		mg/L	1	9/2/2015 2:01:25 PM	R28635
Chloride	2.9	0.50		mg/L	1	9/2/2015 2:01:25 PM	R28635
Nitrogen, Nitrite (As N)	ND	0.10		mg/L	1	9/2/2015 2:01:25 PM	R28635
Bromide	ND	0.10		mg/L	1	9/2/2015 2:01:25 PM	R28635
Nitrogen, Nitrate (As N)	ND	0.10		mg/L	1	9/2/2015 2:01:25 PM	R28635
Phosphorus, Orthophosphate (As P)	ND	0.50		mg/L	1	9/2/2015 2:01:25 PM	R28635
Sulfate	52	10		mg/L	20	9/2/2015 2:38:39 PM	R28635
SM2510B: SPECIFIC CONDUCTANCE							Analyst: JRR
Conductivity	300	0.010		µmhos/cm	1	9/8/2015 3:57:52 PM	R28726
SM2320B: ALKALINITY							Analyst: JRR
Bicarbonate (As CaCO3)	91.00	20.00		mg/L CaCO3	1	9/8/2015 3:57:52 PM	R28726
Carbonate (As CaCO3)	ND	2.000		mg/L CaCO3	1	9/8/2015 3:57:52 PM	R28726
Total Alkalinity (as CaCO3)	91.00	20.00		mg/L CaCO3	1	9/8/2015 3:57:52 PM	R28726
SM2540C MOD: TOTAL DISSOLVED SOLIDS							Analyst: KS
Total Dissolved Solids	200	40.0	D	mg/L	1	9/3/2015 6:27:00 PM	21114
EPA METHOD 200.7: DISSOLVED METALS							Analyst: ELS
Barium	0.072	0.0020		mg/L	1	9/9/2015 4:24:38 PM	B28720
Cadmium	ND	0.0020		mg/L	1	9/9/2015 4:24:38 PM	B28720
Calcium	35	1.0		mg/L	1	9/10/2015 1:01:48 PM	A28759
Chromium	ND	0.0060		mg/L	1	9/9/2015 4:24:38 PM	B28720
Copper	ND	0.0060		mg/L	1	9/9/2015 4:24:38 PM	B28720
Iron	0.028	0.020		mg/L	1	9/10/2015 1:01:48 PM	A28759
Magnesium	5.5	1.0		mg/L	1	9/10/2015 1:01:48 PM	A28759
Manganese	0.0037	0.0020		mg/L	1	9/9/2015 4:24:38 PM	B28720
Potassium	2.0	1.0		mg/L	1	9/10/2015 1:01:48 PM	A28759
Silver	ND	0.0050		mg/L	1	9/10/2015 1:01:48 PM	A28759
Sodium	18	1.0		mg/L	1	9/23/2015 3:02:10 PM	A29061

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1509079

Date Reported: 10/7/2015

CLIENT: Western Refining Southwest, Inc.

Client Sample ID: North of 45

Project: San Juan River 9-1-15

Collection Date: 9/1/2015 12:30:00 PM

Lab ID: 1509079-001

Matrix: AQUEOUS

Received Date: 9/2/2015 8:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 200.7: DISSOLVED METALS							Analyst: ELS
Zinc	0.018	0.010		mg/L	1	9/9/2015 4:24:38 PM	B28720
EPA METHOD 7470: MERCURY							Analyst: MED
Mercury	ND	0.00020		mg/L	1	9/4/2015 3:34:12 PM	21146
EPA 6010B: TOTAL RECOVERABLE METALS							Analyst: MED
Arsenic	ND	0.020		mg/L	1	9/4/2015 9:51:22 AM	21131
Barium	0.15	0.020		mg/L	1	9/4/2015 9:51:22 AM	21131
Cadmium	ND	0.0020		mg/L	1	9/4/2015 9:51:22 AM	21131
Chromium	ND	0.0060		mg/L	1	9/4/2015 9:51:22 AM	21131
Lead	ND	0.0050		mg/L	1	9/4/2015 9:51:22 AM	21131
Selenium	ND	0.050		mg/L	1	9/4/2015 9:51:22 AM	21131
Silver	ND	0.0050		mg/L	1	9/4/2015 9:51:22 AM	21131
EPA METHOD 8015D: GASOLINE RANGE							Analyst: AG
Gasoline Range Organics (GRO)	ND	0.050		mg/L	1	9/4/2015 5:40:46 PM	B28684
Surr: BFB	102	70-130		%REC	1	9/4/2015 5:40:46 PM	B28684
EPA METHOD 8260: VOLATILES SHORT LIST							Analyst: DJF
Benzene	ND	1.0		µg/L	1	9/2/2015 6:45:48 PM	A28626
Toluene	ND	1.0		µg/L	1	9/2/2015 6:45:48 PM	A28626
Ethylbenzene	ND	1.0		µg/L	1	9/2/2015 6:45:48 PM	A28626
Methyl tert-butyl ether (MTBE)	ND	1.0		µg/L	1	9/2/2015 6:45:48 PM	A28626
Xylenes, Total	ND	1.5		µg/L	1	9/2/2015 6:45:48 PM	A28626
Surr: 1,2-Dichloroethane-d4	99.9	70-130		%REC	1	9/2/2015 6:45:48 PM	A28626
Surr: 4-Bromofluorobenzene	103	70-130		%REC	1	9/2/2015 6:45:48 PM	A28626
Surr: Dibromofluoromethane	108	70-130		%REC	1	9/2/2015 6:45:48 PM	A28626
Surr: Toluene-d8	96.4	70-130		%REC	1	9/2/2015 6:45:48 PM	A28626

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank
	D Sample Diluted Due to Matrix	E Value above quantitation range
	H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits
	ND Not Detected at the Reporting Limit	P Sample pH Not In Range
	R RPD outside accepted recovery limits	RL Reporting Detection Limit
	S % Recovery outside of range due to dilution or matrix	

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1509079

Date Reported: 10/7/2015

CLIENT: Western Refining Southwest, Inc.

Client Sample ID: North of 46

Project: San Juan River 9-1-15

Collection Date: 9/1/2015 1:00:00 PM

Lab ID: 1509079-002

Matrix: AQUEOUS

Received Date: 9/2/2015 8:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015D: DIESEL RANGE							Analyst: JME
Diesel Range Organics (DRO)	ND	0.20		mg/L	1	9/3/2015 12:42:06 AM	21109
Motor Oil Range Organics (MRO)	ND	2.5		mg/L	1	9/3/2015 12:42:06 AM	21109
Surr: DNOP	124	84.6-165		%REC	1	9/3/2015 12:42:06 AM	21109
EPA 200.8: DISSOLVED METALS							Analyst: DBD
Arsenic	ND	0.0010		mg/L	1	9/16/2015 1:36:18 PM	B28886
Lead	ND	0.00050		mg/L	1	9/16/2015 1:36:18 PM	B28886
Selenium	ND	0.0010		mg/L	1	9/16/2015 1:36:18 PM	B28886
Uranium	0.00067	0.00050		mg/L	1	9/16/2015 1:36:18 PM	B28886
EPA METHOD 300.0: ANIONS							Analyst: LGT
Fluoride	0.17	0.10		mg/L	1	9/2/2015 2:51:04 PM	R28635
Chloride	2.9	0.50		mg/L	1	9/2/2015 2:51:04 PM	R28635
Nitrogen, Nitrite (As N)	ND	0.10		mg/L	1	9/2/2015 2:51:04 PM	R28635
Bromide	ND	0.10		mg/L	1	9/2/2015 2:51:04 PM	R28635
Nitrogen, Nitrate (As N)	ND	0.10		mg/L	1	9/2/2015 2:51:04 PM	R28635
Phosphorus, Orthophosphate (As P)	ND	0.50		mg/L	1	9/2/2015 2:51:04 PM	R28635
Sulfate	53	10		mg/L	20	9/2/2015 3:03:28 PM	R28635
SM2510B: SPECIFIC CONDUCTANCE							Analyst: JRR
Conductivity	310	0.010		µmhos/cm	1	9/8/2015 4:04:52 PM	R28726
SM2320B: ALKALINITY							Analyst: JRR
Bicarbonate (As CaCO3)	92.04	20.00		mg/L CaCO3	1	9/8/2015 4:04:52 PM	R28726
Carbonate (As CaCO3)	ND	2.000		mg/L CaCO3	1	9/8/2015 4:04:52 PM	R28726
Total Alkalinity (as CaCO3)	92.04	20.00		mg/L CaCO3	1	9/8/2015 4:04:52 PM	R28726
SM2540C MOD: TOTAL DISSOLVED SOLIDS							Analyst: KS
Total Dissolved Solids	202	40.0	D	mg/L	1	9/3/2015 6:27:00 PM	21114
EPA METHOD 200.7: DISSOLVED METALS							Analyst: ELS
Barium	0.074	0.0020		mg/L	1	9/9/2015 4:26:43 PM	B28720
Cadmium	ND	0.0020		mg/L	1	9/9/2015 4:26:43 PM	B28720
Calcium	36	1.0		mg/L	1	9/10/2015 1:03:54 PM	A28759
Chromium	ND	0.0060		mg/L	1	9/9/2015 4:26:43 PM	B28720
Copper	ND	0.0060		mg/L	1	9/9/2015 4:26:43 PM	B28720
Iron	0.085	0.020		mg/L	1	9/10/2015 1:03:54 PM	A28759
Magnesium	5.6	1.0		mg/L	1	9/10/2015 1:03:54 PM	A28759
Manganese	0.0092	0.0020		mg/L	1	9/9/2015 4:26:43 PM	B28720
Potassium	2.0	1.0		mg/L	1	9/10/2015 1:03:54 PM	A28759
Silver	ND	0.0050		mg/L	1	9/10/2015 1:03:54 PM	A28759
Sodium	18	1.0		mg/L	1	9/23/2015 3:04:13 PM	A29061

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1509079

Date Reported: 10/7/2015

CLIENT: Western Refining Southwest, Inc.

Client Sample ID: North of 46

Project: San Juan River 9-1-15

Collection Date: 9/1/2015 1:00:00 PM

Lab ID: 1509079-002

Matrix: AQUEOUS

Received Date: 9/2/2015 8:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 200.7: DISSOLVED METALS							Analyst: ELS
Zinc	0.028	0.010		mg/L	1	9/9/2015 4:26:43 PM	B28720
EPA METHOD 7470: MERCURY							Analyst: MED
Mercury	ND	0.00020		mg/L	1	9/4/2015 3:52:56 PM	21146
EPA 6010B: TOTAL RECOVERABLE METALS							Analyst: MED
Arsenic	ND	0.020		mg/L	1	9/4/2015 9:52:56 AM	21131
Barium	0.17	0.020		mg/L	1	9/4/2015 9:52:56 AM	21131
Cadmium	ND	0.0020		mg/L	1	9/4/2015 9:52:56 AM	21131
Chromium	ND	0.0060		mg/L	1	9/4/2015 9:52:56 AM	21131
Lead	ND	0.0050		mg/L	1	9/4/2015 9:52:56 AM	21131
Selenium	ND	0.050		mg/L	1	9/4/2015 9:52:56 AM	21131
Silver	ND	0.0050		mg/L	1	9/4/2015 9:52:56 AM	21131
EPA METHOD 8015D: GASOLINE RANGE							Analyst: AG
Gasoline Range Organics (GRO)	ND	0.050		mg/L	1	9/4/2015 7:06:52 PM	B28684
Surr: BFB	102	70-130		%REC	1	9/4/2015 7:06:52 PM	B28684
EPA METHOD 8260: VOLATILES SHORT LIST							Analyst: DJF
Benzene	ND	1.0		µg/L	1	9/2/2015 7:13:15 PM	A28626
Toluene	ND	1.0		µg/L	1	9/2/2015 7:13:15 PM	A28626
Ethylbenzene	ND	1.0		µg/L	1	9/2/2015 7:13:15 PM	A28626
Methyl tert-butyl ether (MTBE)	ND	1.0		µg/L	1	9/2/2015 7:13:15 PM	A28626
Xylenes, Total	ND	1.5		µg/L	1	9/2/2015 7:13:15 PM	A28626
Surr: 1,2-Dichloroethane-d4	95.1	70-130		%REC	1	9/2/2015 7:13:15 PM	A28626
Surr: 4-Bromofluorobenzene	102	70-130		%REC	1	9/2/2015 7:13:15 PM	A28626
Surr: Dibromofluoromethane	109	70-130		%REC	1	9/2/2015 7:13:15 PM	A28626
Surr: Toluene-d8	98.0	70-130		%REC	1	9/2/2015 7:13:15 PM	A28626

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1509079

Date Reported: 10/7/2015

CLIENT: Western Refining Southwest, Inc.

Client Sample ID: Trip Blank

Project: San Juan River 9-1-15

Collection Date:

Lab ID: 1509079-003

Matrix: TRIP BLANK

Received Date: 9/2/2015 8:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260: VOLATILES SHORT LIST						Analyst: DJF	
Benzene	ND	1.0		µg/L	1	9/2/2015 7:40:40 PM	A28626
Toluene	ND	1.0		µg/L	1	9/2/2015 7:40:40 PM	A28626
Ethylbenzene	ND	1.0		µg/L	1	9/2/2015 7:40:40 PM	A28626
Methyl tert-butyl ether (MTBE)	ND	1.0		µg/L	1	9/2/2015 7:40:40 PM	A28626
Xylenes, Total	ND	1.5		µg/L	1	9/2/2015 7:40:40 PM	A28626
Surr: 1,2-Dichloroethane-d4	93.8	70-130		%REC	1	9/2/2015 7:40:40 PM	A28626
Surr: 4-Bromofluorobenzene	107	70-130		%REC	1	9/2/2015 7:40:40 PM	A28626
Surr: Dibromofluoromethane	103	70-130		%REC	1	9/2/2015 7:40:40 PM	A28626
Surr: Toluene-d8	96.4	70-130		%REC	1	9/2/2015 7:40:40 PM	A28626

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1509079

07-Oct-15

Client: Western Refining Southwest, Inc.

Project: San Juan River 9-1-15

Sample ID MB	SampType: MBLK		TestCode: EPA Method 200.7: Dissolved Metals							
Client ID: PBW	Batch ID: B28720		RunNo: 28720							
Prep Date:	Analysis Date: 9/9/2015		SeqNo: 870471		Units: mg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	ND	0.0020								
Cadmium	ND	0.0020								
Chromium	ND	0.0060								
Copper	ND	0.0060								
Manganese	ND	0.0020								
Zinc	ND	0.010								

Sample ID LCS	SampType: LCS		TestCode: EPA Method 200.7: Dissolved Metals							
Client ID: LCSW	Batch ID: B28720		RunNo: 28720							
Prep Date:	Analysis Date: 9/9/2015		SeqNo: 870472		Units: mg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.49	0.0020	0.5000	0	97.0	85	115			
Cadmium	0.50	0.0020	0.5000	0	100	85	115			
Chromium	0.48	0.0060	0.5000	0	96.8	85	115			
Copper	0.47	0.0060	0.5000	0	93.0	85	115			
Manganese	0.48	0.0020	0.5000	0	95.4	85	115			
Zinc	0.48	0.010	0.5000	0	96.1	85	115			

Sample ID LLLCS	SampType: LCSLL		TestCode: EPA Method 200.7: Dissolved Metals							
Client ID: BatchQC	Batch ID: B28720		RunNo: 28720							
Prep Date:	Analysis Date: 9/9/2015		SeqNo: 870473		Units: mg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	ND	0.0020	0.002000	0	83.0	50	150			
Cadmium	ND	0.0020	0.002000	0	89.0	50	150			
Chromium	ND	0.0060	0.006000	0	81.7	50	150			
Copper	ND	0.0060	0.006000	0	95.3	50	150			
Manganese	0.0020	0.0020	0.002000	0	101	50	150			
Zinc	ND	0.010	0.005000	0	130	50	150			

Sample ID 1509079-002FMS	SampType: MS		TestCode: EPA Method 200.7: Dissolved Metals							
Client ID: North of 46	Batch ID: B28720		RunNo: 28720							
Prep Date:	Analysis Date: 9/9/2015		SeqNo: 870846		Units: mg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.56	0.0020	0.5000	0.07392	97.1	70	130			
Cadmium	0.50	0.0020	0.5000	0	99.2	70	130			
Chromium	0.47	0.0060	0.5000	0	94.2	70	130			
Copper	0.47	0.0060	0.5000	0	93.8	70	130			

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1509079

07-Oct-15

Client: Western Refining Southwest, Inc.

Project: San Juan River 9-1-15

Sample ID	1509079-002FMS		SampType: MS		TestCode: EPA Method 200.7: Dissolved Metals					
Client ID:	North of 46		Batch ID: B28720		RunNo: 28720					
Prep Date:			Analysis Date: 9/9/2015		SeqNo: 870846		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Manganese	0.50	0.0020	0.5000	0.009190	98.5	70	130			
Zinc	0.52	0.010	0.5000	0.02834	97.6	70	130			

Sample ID	1509079-002FMSD		SampType: MSD		TestCode: EPA Method 200.7: Dissolved Metals					
Client ID:	North of 46		Batch ID: B28720		RunNo: 28720					
Prep Date:			Analysis Date: 9/9/2015		SeqNo: 870847		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.56	0.0020	0.5000	0.07392	98.1	70	130	0.883	20	
Cadmium	0.51	0.0020	0.5000	0	101	70	130	1.81	20	
Chromium	0.48	0.0060	0.5000	0	95.2	70	130	1.03	20	
Copper	0.48	0.0060	0.5000	0	95.1	70	130	1.37	20	
Manganese	0.51	0.0020	0.5000	0.009190	99.6	70	130	1.09	20	
Zinc	0.52	0.010	0.5000	0.02834	97.4	70	130	0.213	20	

Sample ID	MB		SampType: MBLK		TestCode: EPA Method 200.7: Dissolved Metals					
Client ID:	PBW		Batch ID: A28759		RunNo: 28759					
Prep Date:			Analysis Date: 9/10/2015		SeqNo: 871968		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Calcium	ND	1.0								
Iron	ND	0.020								
Magnesium	ND	1.0								
Potassium	ND	1.0								
Silver	ND	0.0050								

Sample ID	LCS		SampType: LCS		TestCode: EPA Method 200.7: Dissolved Metals					
Client ID:	LCSW		Batch ID: A28759		RunNo: 28759					
Prep Date:			Analysis Date: 9/10/2015		SeqNo: 871969		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Calcium	51	1.0	50.00	0	103	85	115			
Iron	0.52	0.020	0.5000	0	104	85	115			
Magnesium	52	1.0	50.00	0	104	85	115			
Potassium	49	1.0	50.00	0	98.5	85	115			
Silver	0.088	0.0050	0.1000	0	87.9	85	115			

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1509079

07-Oct-15

Client: Western Refining Southwest, Inc.

Project: San Juan River 9-1-15

Sample ID LLLCS	SampType: LCSLL			TestCode: EPA Method 200.7: Dissolved Metals						
Client ID: BatchQC	Batch ID: A28759			RunNo: 28759						
Prep Date:	Analysis Date: 9/10/2015			SeqNo: 871970			Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Calcium	ND	1.0	0.5000	0	100	50	150			
Iron	0.020	0.020	0.02000	0	101	50	150			
Magnesium	ND	1.0	0.5000	0	103	50	150			
Potassium	ND	1.0	0.5000	0	102	50	150			
Silver	ND	0.0050	0.005000	0	85.6	50	150			

Sample ID 1509079-002FMS	SampType: MS			TestCode: EPA Method 200.7: Dissolved Metals						
Client ID: North of 46	Batch ID: A28759			RunNo: 28759						
Prep Date:	Analysis Date: 9/10/2015			SeqNo: 872055			Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Calcium	85	1.0	50.00	35.62	98.8	70	130			
Iron	0.58	0.020	0.5000	0.08451	98.8	70	130			
Magnesium	55	1.0	50.00	5.559	98.3	70	130			
Potassium	50	1.0	50.00	2.048	95.3	70	130			
Silver	0.088	0.0050	0.1000	0	87.9	70	130			

Sample ID 1509079-002FMSD	SampType: MSD			TestCode: EPA Method 200.7: Dissolved Metals						
Client ID: North of 46	Batch ID: A28759			RunNo: 28759						
Prep Date:	Analysis Date: 9/10/2015			SeqNo: 872059			Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Calcium	87	1.0	50.00	35.62	102	70	130	1.98	20	
Iron	0.59	0.020	0.5000	0.08451	102	70	130	2.63	20	
Magnesium	56	1.0	50.00	5.559	101	70	130	2.27	20	
Potassium	51	1.0	50.00	2.048	97.6	70	130	2.34	20	
Silver	0.092	0.0050	0.1000	0	92.4	70	130	5.01	20	

Sample ID MB	SampType: MBLK			TestCode: EPA Method 200.7: Dissolved Metals						
Client ID: PBW	Batch ID: A29061			RunNo: 29061						
Prep Date:	Analysis Date: 9/23/2015			SeqNo: 881796			Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Sodium	ND	1.0								

Sample ID LCS	SampType: LCS			TestCode: EPA Method 200.7: Dissolved Metals						
Client ID: LCSW	Batch ID: A29061			RunNo: 29061						
Prep Date:	Analysis Date: 9/23/2015			SeqNo: 881797			Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Qualifiers:

* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank
D Sample Diluted Due to Matrix	E Value above quantitation range
H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits
ND Not Detected at the Reporting Limit	P Sample pH Not In Range
R RPD outside accepted recovery limits	RL Reporting Detection Limit
S % Recovery outside of range due to dilution or matrix	

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1509079

07-Oct-15

Client: Western Refining Southwest, Inc.**Project:** San Juan River 9-1-15

Sample ID	LCS		SampType: LCS		TestCode: EPA Method 200.7: Dissolved Metals					
Client ID:	LCSW		Batch ID: A29061		RunNo: 29061					
Prep Date:			Analysis Date: 9/23/2015		SeqNo: 881797		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Sodium	49	1.0	50.00	0	97.9	85	115			

Sample ID	LLLCS		SampType: LCSLL		TestCode: EPA Method 200.7: Dissolved Metals					
Client ID:	BatchQC		Batch ID: A29061		RunNo: 29061					
Prep Date:			Analysis Date: 9/23/2015		SeqNo: 881798		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Sodium	ND	1.0	0.5000	0	101	50	150			

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1509079

07-Oct-15

Client: Western Refining Southwest, Inc.

Project: San Juan River 9-1-15

Sample ID	LCS			SampType:	LCS			TestCode:	EPA 200.8: Dissolved Metals		
Client ID:	LCSW			Batch ID:	B28886			RunNo:	28886		
Prep Date:				Analysis Date:	9/16/2015			SeqNo:	876384		
								Units:	mg/L		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Arsenic	0.024	0.0010	0.02500	0	95.8	85	115				
Lead	0.012	0.00050	0.01250	0	98.5	85	115				
Selenium	0.023	0.0010	0.02500	0	92.8	85	115				
Uranium	0.012	0.00050	0.01250	0	99.0	85	115				

Sample ID	LLCS		SampType: LCSLL		TestCode: EPA 200.8: Dissolved Metals					
Client ID:	BatchQC		Batch ID: B28886		RunNo: 28886					
Prep Date:			Analysis Date: 9/16/2015		SeqNo: 876385		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	ND	0.0010	0.001000	0	94.9	50	150			
Lead	0.00051	0.00050	0.0005000	0	101	50	150			
Selenium	ND	0.0010	0.001000	0	92.9	50	150			
Uranium	0.00051	0.00050	0.0005000	0	101	50	150			

Sample ID	MB	SampType: MBLK			TestCode: EPA 200.8: Dissolved Metals					
Client ID:	PBW	Batch ID: B28886			RunNo: 28886					
Prep Date:		Analysis Date: 9/16/2015			SeqNo: 876387		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	ND	0.0010								
Lead	ND	0.00050								
Selenium	ND	0.0010								
Uranium	ND	0.00050								

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1509079

07-Oct-15

Client: Western Refining Southwest, Inc.

Project: San Juan River 9-1-15

Sample ID MB	SampType: MBLK		TestCode: EPA Method 300.0: Anions							
Client ID: PBW	Batch ID: R28635		RunNo: 28635							
Prep Date:	Analysis Date: 9/2/2015		SeqNo: 866764		Units: mg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	ND	0.10								
Chloride	ND	0.50								
Nitrogen, Nitrite (As N)	ND	0.10								
Bromide	ND	0.10								
Nitrogen, Nitrate (As N)	ND	0.10								
Phosphorus, Orthophosphate (As P)	ND	0.50								
Sulfate	ND	0.50								

Sample ID LCS	SampType: LCS		TestCode: EPA Method 300.0: Anions							
Client ID: LCSW	Batch ID: R28635		RunNo: 28635							
Prep Date:	Analysis Date: 9/2/2015		SeqNo: 866765		Units: mg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	0.52	0.10	0.5000	0	103	90	110			
Chloride	4.9	0.50	5.000	0	98.8	90	110			
Nitrogen, Nitrite (As N)	0.98	0.10	1.000	0	97.6	90	110			
Bromide	2.5	0.10	2.500	0	100	90	110			
Nitrogen, Nitrate (As N)	2.6	0.10	2.500	0	104	90	110			
Phosphorus, Orthophosphate (As P)	5.0	0.50	5.000	0	99.9	90	110			
Sulfate	10	0.50	10.00	0	101	90	110			

Sample ID 1509079-001DMS	SampType: MS		TestCode: EPA Method 300.0: Anions							
Client ID: North of 45	Batch ID: R28635		RunNo: 28635							
Prep Date:	Analysis Date: 9/2/2015		SeqNo: 866767		Units: mg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	0.63	0.10	0.5000	0.1723	92.1	75.3	111			
Chloride	7.8	0.50	5.000	2.916	97.2	81.2	116			
Nitrogen, Nitrite (As N)	0.92	0.10	1.000	0	92.3	77.1	110			
Bromide	2.4	0.10	2.500	0	95.4	84.6	106			
Nitrogen, Nitrate (As N)	2.5	0.10	2.500	0	99.6	87.3	111			
Phosphorus, Orthophosphate (As P)	4.7	0.50	5.000	0.09772	92.6	76.5	106			

Sample ID 1509079-001DMSD	SampType: MSD		TestCode: EPA Method 300.0: Anions							
Client ID: North of 45	Batch ID: R28635		RunNo: 28635							
Prep Date:	Analysis Date: 9/2/2015		SeqNo: 866768		Units: mg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	0.65	0.10	0.5000	0.1723	95.4	75.3	111	2.56	20	
Chloride	7.9	0.50	5.000	2.916	100	81.2	116	1.93	20	

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S % Recovery outside of range due to dilution or matrix
- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1509079

07-Oct-15

Client: Western Refining Southwest, Inc.

Project: San Juan River 9-1-15

Sample ID	1509079-001DMSD	SampType:	MSD	TestCode:	EPA Method 300.0: Anions						
Client ID:	North of 45	Batch ID:	R28635	RunNo:	28635						
Prep Date:		Analysis Date:	9/2/2015	SeqNo:	866768	Units:	mg/L				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Nitrogen, Nitrite (As N)	0.95	0.10	1.000	0	95.2	77.1	110	3.05	20		
Bromide	2.5	0.10	2.500	0	98.4	84.6	106	3.10	20		
Nitrogen, Nitrate (As N)	2.6	0.10	2.500	0	103	87.3	111	3.18	20		
Phosphorus, Orthophosphate (As P)	4.9	0.50	5.000	0.09772	96.0	76.5	106	3.50	20		

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1509079

07-Oct-15

Client: Western Refining Southwest, Inc.

Project: San Juan River 9-1-15

Sample ID	MB-21109		SampType: MBLK		TestCode: EPA Method 8015D: Diesel Range					
Client ID:	PBW		Batch ID: 21109		RunNo: 28606					
Prep Date:	9/2/2015		Analysis Date: 9/2/2015		SeqNo: 866351		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	0.20								
Motor Oil Range Organics (MRO)	ND	2.5								
Surr: DNOP	0.56		0.5000		112	84.6	165			

Sample ID	LCS-21109		SampType: LCS		TestCode: EPA Method 8015D: Diesel Range					
Client ID:	LCSW		Batch ID: 21109		RunNo: 28606					
Prep Date:	9/2/2015		Analysis Date: 9/2/2015		SeqNo: 866352		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	2.3	0.20	2.500	0	92.6	67.3	174			
Surr: DNOP	0.28		0.2500		112	84.6	165			

Sample ID	1509079-001CMS		SampType: MS		TestCode: EPA Method 8015D: Diesel Range					
Client ID:	North of 45		Batch ID: 21109		RunNo: 28606					
Prep Date:	9/2/2015		Analysis Date: 9/2/2015		SeqNo: 866357		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	2.2	0.20	2.500	0	88.6	67.2	210			
Surr: DNOP	0.27		0.2500		109	84.6	165			

Sample ID	1509079-001CMSD		SampType: MSD		TestCode: EPA Method 8015D: Diesel Range					
Client ID:	North of 45		Batch ID: 21109		RunNo: 28606					
Prep Date:	9/2/2015		Analysis Date: 9/3/2015		SeqNo: 866358		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	2.3	0.20	2.500	0	92.1	67.2	210	3.91	33.9	
Surr: DNOP	0.29		0.2500		114	84.6	165	0	0	

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1509079

07-Oct-15

Client: Western Refining Southwest, Inc.

Project: San Juan River 9-1-15

Sample ID	rb	SampType:	MBLK	TestCode:	EPA Method 8260: Volatiles Short List					
Client ID:	PBW	Batch ID:	A28626	RunNo:	28626					
Prep Date:		Analysis Date:	9/2/2015	SeqNo:	866329	Units:	µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	1.0								
Toluene	ND	1.0								
Ethylbenzene	ND	1.0								
Methyl tert-butyl ether (MTBE)	ND	1.0								
Xylenes, Total	ND	1.5								
Surr: 1,2-Dichloroethane-d4	9.6		10.00		95.7	70	130			
Surr: 4-Bromofluorobenzene	11		10.00		105	70	130			
Surr: Dibromofluoromethane	11		10.00		108	70	130			
Surr: Toluene-d8	9.8		10.00		98.1	70	130			

Sample ID	100ng lcs	SampType:	LCS	TestCode:	EPA Method 8260: Volatiles Short List					
Client ID:	LCSW	Batch ID:	A28626	RunNo:	28626					
Prep Date:		Analysis Date:	9/2/2015	SeqNo:	866330	Units:	µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	20	1.0	20.00	0	98.9	70	130			
Toluene	19	1.0	20.00	0	97.2	70	130			
Surr: 1,2-Dichloroethane-d4	9.7		10.00		97.1	70	130			
Surr: 4-Bromofluorobenzene	11		10.00		105	70	130			
Surr: Dibromofluoromethane	11		10.00		108	70	130			
Surr: Toluene-d8	9.7		10.00		97.2	70	130			

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1509079

07-Oct-15

Client: Western Refining Southwest, Inc.

Project: San Juan River 9-1-15

Sample ID	MB-21146		SampType:	MBLK		TestCode:	EPA Method 7470: Mercury				
Client ID:	PBW		Batch ID:	21146		RunNo:	28670				
Prep Date:	9/4/2015		Analysis Date:	9/4/2015		SeqNo:	868316		Units: mg/L		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Mercurv	ND	0.00020									

Sample ID	LCS-21146			SampType:	LCS		TestCode:	EPA Method 7470: Mercury			
Client ID:	LCSW			Batch ID:	21146		RunNo:	28670			
Prep Date:	9/4/2015			Analysis Date:	9/4/2015		SeqNo:	868317		Units:	mg/L
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Mercury	0.0051	0.00020	0.005000	0	102	80	120				

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1509079

07-Oct-15

Client: Western Refining Southwest, Inc.

Project: San Juan River 9-1-15

Sample ID	MB-21131		SampType: MBLK		TestCode: EPA 6010B: Total Recoverable Metals					
Client ID:	PBW		Batch ID: 21131		RunNo: 28664					
Prep Date:	9/3/2015		Analysis Date: 9/4/2015		SeqNo: 868122		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	ND	0.020								
Barium	ND	0.020								
Cadmium	ND	0.0020								
Chromium	ND	0.0060								
Lead	ND	0.0050								
Selenium	ND	0.050								
Silver	ND	0.0050								

Sample ID	LCS-21131			SampType:	LCS		TestCode:	EPA 6010B: Total Recoverable Metals			
Client ID:	LCSW			Batch ID:	21131		RunNo:	28664			
Prep Date:	9/3/2015			Analysis Date:	9/4/2015		SeqNo:	868123		Units:	mg/L
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Arsenic	0.50	0.020	0.5000	0	101	80	120				
Barium	0.48	0.020	0.5000	0	95.3	80	120				
Cadmium	0.48	0.0020	0.5000	0	96.8	80	120				
Chromium	0.48	0.0060	0.5000	0	95.4	80	120				
Lead	0.48	0.0050	0.5000	0	95.9	80	120				
Selenium	0.50	0.050	0.5000	0	101	80	120				
Silver	0.10	0.0050	0.1000	0	99.7	80	120				

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1509079

07-Oct-15

Client: Western Refining Southwest, Inc.

Project: San Juan River 9-1-15

Sample ID rb	SampType: MBLK		TestCode: EPA Method 8015D: Gasoline Range							
Client ID: PBW	Batch ID: B28684		RunNo: 28684							
Prep Date:	Analysis Date: 9/4/2015		SeqNo: 869169		Units: mg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	0.050								
Surr: BFB	9.9		10.00		98.9	70	130			

Sample ID 2.5ug gro lcs	SampType: LCS		TestCode: EPA Method 8015D: Gasoline Range							
Client ID: LCSW	Batch ID: B28684		RunNo: 28684							
Prep Date:	Analysis Date: 9/4/2015		SeqNo: 869170		Units: mg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	0.52	0.050	0.5000	0	105	80.6	122			
Surr: BFB	10		10.00		101	70	130			

Sample ID 1509079-001b ms	SampType: MS		TestCode: EPA Method 8015D: Gasoline Range							
Client ID: North of 45	Batch ID: B28684		RunNo: 28684							
Prep Date:	Analysis Date: 9/4/2015		SeqNo: 869173		Units: mg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	0.51	0.050	0.5000	0	101	53.8	128			
Surr: BFB	10		10.00		103	70	130			

Sample ID 1509079-001b msd	SampType: MSD		TestCode: EPA Method 8015D: Gasoline Range							
Client ID: North of 45	Batch ID: B28684		RunNo: 28684							
Prep Date:	Analysis Date: 9/4/2015		SeqNo: 869174		Units: mg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	0.47	0.050	0.5000	0	94.8	53.8	128	6.57	20	
Surr: BFB	10		10.00		99.7	70	130	0	0	

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1509079

07-Oct-15

Client: Western Refining Southwest, Inc.

Project: San Juan River 9-1-15

Sample ID	mb-1		SampType: MBLK		TestCode: SM2320B: Alkalinity					
Client ID:	PBW		Batch ID: R28726		RunNo: 28726					
Prep Date:			Analysis Date: 9/8/2015		SeqNo: 870583		Units: mg/L CaCO3			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Alkalinity (as CaCO3)	ND	20.00								

Sample ID	Ics-1		SampType: LCS		TestCode: SM2320B: Alkalinity					
Client ID:	LCSW		Batch ID: R28726		RunNo: 28726					
Prep Date:			Analysis Date: 9/8/2015		SeqNo: 870584		Units: mg/L CaCO3			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Alkalinity (as CaCO3)	80.04	20.00	80.00	0	100	90	110			

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1509079

07-Oct-15

Client: Western Refining Southwest, Inc.

Project: San Juan River 9-1-15

Sample ID	MB-21114		SampType:	MBLK		TestCode:	SM2540C MOD: Total Dissolved Solids				
Client ID:	PBW		Batch ID:	21114		RunNo:	28651				
Prep Date:	9/2/2015		Analysis Date:	9/3/2015		SeqNo:	867292		Units: mg/L		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Total Dissolved Solids	ND	20.0									

Sample ID	LCS-21114		SampType: LCS		TestCode: SM2540C MOD: Total Dissolved Solids					
Client ID:	LCSW		Batch ID: 21114		RunNo: 28651					
Prep Date:	9/2/2015		Analysis Date: 9/3/2015		SeqNo: 867293		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Dissolved Solids	1010	20.0	1000	0	101	80	120			

Sample ID	1509079-001DMS		SampType: MS		TestCode: SM2540C MOD: Total Dissolved Solids					
Client ID:	North of 45		Batch ID: 21114		RunNo: 28651					
Prep Date:	9/2/2015		Analysis Date: 9/3/2015		SeqNo: 867299		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Dissolved Solids	2200	40.0	2000	200.0	99.8	80	120			D

Sample ID	1509079-001DMSD		SampType: MSD		TestCode: SM2540C MOD: Total Dissolved Solids					
Client ID:	North of 45		Batch ID: 21114		RunNo: 28651					
Prep Date:	9/2/2015		Analysis Date: 9/3/2015		SeqNo: 867300		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Dissolved Solids	2220	40.0	2000	200.0	101	80	120	1.18	5	D

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit

Sample Log-In Check List

Client Name: **Western Refining Southw**

Work Order Number: **1509079**

RcptNo: **1**

Received by/date:

Logged By: **Lindsay Mangin**

09/02/15
9/2/2015 8:00:00 AM

Completed By: **Lindsay Mangin**

9/2/2015 8:57:27 AM

Reviewed By:

09/02/15

Chain of Custody

1. Custody seals intact on sample bottles? Yes ☐ No ☐ Not Present ☒
2. Is Chain of Custody complete? Yes ☒ No ☐ Not Present ☐
3. How was the sample delivered? Courier

Log In

4. Was an attempt made to cool the samples? Yes ☒ No ☐ NA ☐
5. Were all samples received at a temperature of >0° C to 6.0°C Yes ☒ No ☐ NA ☐
6. Sample(s) in proper container(s)? Yes ☒ No ☐
7. Sufficient sample volume for indicated test(s)? Yes ☒ No ☐
8. Are samples (except VOA and ONG) properly preserved? Yes ☒ No ☐
9. Was preservative added to bottles? Yes ☐ No ☒ NA ☐
10. VOA vials have zero headspace? Yes ☒ No ☐ No VOA Vials ☐
11. Were any sample containers received broken? Yes ☐ No ☒
12. Does paperwork match bottle labels?
(Note discrepancies on chain of custody) Yes ☒ No ☐
13. Are matrices correctly identified on Chain of Custody? Yes ☒ No ☐
14. Is it clear what analyses were requested? Yes ☒ No ☐
15. Were all holding times able to be met?
(If no, notify customer for authorization.) Yes ☒ No ☐

of preserved
bottles checked
for pH: **4**
Adjusted: **NO**
(2 or >12 unless noted)
Checked by: **AG**

Special Handling (if applicable)

16. Was client notified of all discrepancies with this order? Yes ☐ No ☐ NA ☒

Person Notified:

Date:

By Whom:

Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding:

Client Instructions:

17. Additional remarks:

18. Cooler Information

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	1.4	Good	Yes			

